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# The American City

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*See pp. 17, 18, 20, 22, 24, 147, 149, 151, 153 for catalogs and publications on municipal and civic subjects*

For Index to Advertisements see page 190

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# Letters to the Editor

## Planning and Maintenance of War Memorials

*To the Editor of* THE AMERICAN CITY:

I HAVE been greatly interested in the series of articles in THE AMERICAN CITY discussing various types of war memorials and I heartily agree with the stress being laid on the importance of making them functional in character.

Following World War I many cities and towns erected community buildings as memorials. As director for twenty-five years of the Building Bureau of the International YMCA, I and my colleagues had the opportunity of studying these buildings and their service in various sections and over a period of years. Many of them fulfilled the expectations of those who promoted them and have continued to serve their communities admirably.

But this experience was not universal. Some buildings became a burden on the communities in which they were located. In general the failures were due to one or more of the following reasons:

1. Failure to diagnose accurately community needs or to interpret these requirements properly in the plan.

2. Lack of a local organization with experience and a flexible program for meeting community needs.

3. Failure to provide adequately for increasing maintenance and operating costs as the building grew older.

It is a relatively simple matter to arouse public enthusiasm for a memorial building. It is a much more serious matter to make sure that the building will continue throughout its life to render a sufficiently comprehensive service to justify the community in supporting it properly. If it does not serve a wide range of interests, if it becomes merely a loafing place or if it deteriorates through lack of financial support, all will agree that it is no fit memorial to the men and women who have given so much for the common good.

In counselling recently with a representative from a neighboring community about a proposal to erect a memorial building, I told him that the equipment he was talking about (gymnasium, club rooms, auditorium, and possibly a swimming pool) could be of far greater use if the building was so placed that the school could utilize the gymnasium, the swimming pool, and even the auditorium, for school activities five days a week. This would not interfere with other agencies and individuals using all the facilities after school hours. Furthermore, if town offices in such a small community could be located in the building, the various club rooms could not only be used by the citizen groups but would be available for various official committee meetings connected with the town government.

By such combinations of use the cost of operating the plant would be distributed between the educational and town government budgets, and thus the proper supervision and maintenance of the building would not be jeopardized when voluntary contributions for its maintenance fell off for one reason or another.

NEIL MCMILLAN, JR.
Director of Civic Planning
Rochester Chamber of Commerce
Rochester 4, N. Y.

## Incentive Taxation for Real Estate Improvements

*To the Editor of* THE AMERICAN CITY:

IN YOUR issue for April, Professor Don B. Leiffer reviews briefly the tax proposals of the various prize winners in the "Boston Contest," and he quotes the first-prize winners as follows:

"The property tax is now assessed against both land and buildings. A tax on land inclines the owner to put it to its most productive use. It encourages improvement and development along the most economical and profitable lines. But a tax on improvements, such as houses, stores, and buildings has an opposite effect. Under our present system of taxation the more extensive and valuable the improvement, the greater is the penalty incurred by the owner. This penalty should be removed."

The above is a timely and encouraging statement and it should have some effect toward offsetting the prevalent undiscriminating demand for a reduction of taxes on "real estate." Its authors obviously realize what many people do not, that property held as "real estate" is property, not of one kind, but of two kinds, namely "property in houses and lands," as defined in Webster's Dictionary. And, what is of particular importance, they realize that the social results of taxes on these two kinds of property are widely different and opposite in effect.

It is obviously quite true, as they point out, that the taxes on buildings and other improvements to land act as a penalty on improvements, and therefore they advocate the removal of this penalty. On the other hand, they point out that the tax on land has just the opposite effect—namely, encourages improvement and development; but the reason for this they do not make quite clear.

The essential nature of property in houses is easily understood. It is property in something created by human labor, and taxes on such property are of course a discouragement to production.

To understand the nature of property in lands, however, we must consider the institution of private property in land, which represents a privilege conferred upon the owner of monopolizing a specified portion of the land in the community. It is this exclusive privilege, then, which constitutes one portion of "real estate," and the price for which this privilege sells on the market constitutes the so-called "land value."

It may be concluded from the above that the present method, so generally employed by municipalities, of raising revenue for municipal purposes by means of a tax on both parts of "real estate" at the same rate, is highly unintelligent and is certain to be unsatisfactory.

The prosperity of a municipality depends very largely on what use the land owners make of their opportunities. Those who adequately improve their property may be called the "helpers": it is they who employ capital and labor and encourage production. Those who fail to do so may be called the "dead heads." If they are required to pay full value for their exclusive privilege and are freed from taxes on present and future improvements, they will not long continue as "dead heads"; they will either become "helpers" or will sell out. On the other hand, if the "helpers" are required to pay only for their exclusive privilege and are exempted from taxation on their improvements, they will have every incentive to continue and to increase their activities. In fact, we may say that taxes on buildings and personal property are levied in order to make up the deficit which arises because of the failure to collect full value for the privilege of exclusive possession of locations on the land.

There is good reason to suppose that, if in any municipality the privilege of land ownership were adequately paid for, there would be no need of taxes on buildings and personal property.

JOHN S. CODMAN
222 Summer St.
Boston, Mass.

# "Going our Way?"

You can give them a lift in more ways than one if you will go easy on Long Distance between 7 and 10 each night.

That's the time many service men are calling home and they'll appreciate your help in leaving the lines for them.

BELL TELEPHONE SYSTEM

# Our Municipal Notebook

## *Government Loans for Local Planning*

THE sum of $17,500,000 has been made available through the War Mobilization and Reconversion Act to non-federal public agencies to assist in the plan preparation of their public works. These funds are to become available through loans or advances to aid in the financing of architectural and engineering plans, drawings, specifications, surveys, and similar work preliminary to the construction of such public works.

The funds are to be appropriated through the Federal Works Agency, 90 percent on the basis of state population and 10 percent according to the discretion of the Federal Works Administrator. The loans to any state shall aggregate not less than one-half of one percent of the total funds available. No loans or advances shall be made with respect to any individual project unless it conforms to an overall state, local, or regional plan approved by competent state, local, or regional authorities.

Advances made to such agencies will, under the terms of the act, be repaid if and when the construction of the public works so planned is undertaken.

All municipal, county, and state agencies (except state highway departments, which receive planning money under federal highway acts) are eligible for this new federal aid. Allotments will be made through the Division Offices of the Bureau of Community Facilities of the Federal Works Agency. Copies of the regulations and application forms are available upon request to these Division Offices or to the United States Conference of Mayors, 730 Jackson Place, Washington, D. C.

## *Timidity Where Boldness Is Needed*

IT had all the earmarks of a well-thought out piece of legislation, this act recently passed by Congress to encourage post-war planning by non-federal agencies. It made money available for worthwhile projects that would fit into logical regional plans. It arranged for the money to be advanced in the form of loans rather than outright grants, thereby allowing the applicant to retain self-respect and independence. And it overcame objections of timid and hesitant applicants, since it required that the loans be repaid only at the time that the project is approved for construction.

But when Congress allotted only $17,500,000 for all this, it showed a lack of appreciation of the job at hand that is difficult to comprehend. General Fleming and his staff originally had recommended a $70,000,000 fund to be used for this purpose—a modest enough planning sum that would produce projects totalling something less than two billion dollars. An amount double the General's request would be perfectly justified—particularly since the funds are issued in the form of loans rather than outright grants.

Allotting only 17½ million to this task is like arming our big battleships with nothing more formidable than 3-inch guns or attacking a tank with a sling-shot. This sum will scarcely make a ripple in a post-war economic system geared to a 100 to 150 billion dollar annual income and 60 million jobs.

In an era of bold and courageous actions, this move by Congress at best seems timid and picayune. It now behooves our state and local governments to provide, to the maximum of their ability, the additional planning funds required for a really adequate program of post-war public works.

## *The FWA Administrator*

MAJOR GENERAL PHILIP B. FLEMING, whose portrait appears on the front cover of this issue of THE AMERICAN CITY, was born in Burlington, Iowa, October 15, 1887; attended the University of Wisconsin 1905-1907; transferred by appointment to West Point, from which he was graduated in 1911. As high-ranking cadet privileged to choose his own branch of the service, he elected the Corps of Engineers and attended the Army Engineering School during 1912 and 1913.

General Fleming served as a colonel during the first World War, later reverting to his permanent rank of captain. He was promoted to major in 1920, to lieutenant-colonel in 1935, to colonel in January 1940, and to brigadier general in February 1941. In November 1942, he was promoted to the temporary rank of major general.

During his service with the Corps of Engineers, General Fleming was stationed at various times in posts in all parts of the country, from Eastport, Maine, to Vancouver Barracks, Washington, from St. Paul, Minn., to New Orleans, La., in the Philippines, in the Canal Zone, and at West Point.

Other important governmental services culminated in General Fleming's appointment by President Roosevelt in December 1941 to his present post of Federal Works Administrator, in which capacity he has direct responsibility for the Lanham Act war public works and services program, in addition to jurisdiction over the Public Roads Administration, Public Buildings Administration, and the liquidation of Public Works Administration and Work Projects Administration.

## *Construction Groups Reach Understanding to Aid Reconversion*

THE Associated General Contractors of America and the Building and Construction Trades Department of the American Federation of Labor recently disclosed an understanding which had been reached between officials of the two organizations for the purpose of seeking to solve their mutual problems in the post-war period.

Harry A. Dick of Portland, Ore., and President of the Associated General Contractors of America, at the same time issued the following statement from the association's national headquarters in Washington:

"The understanding reached between the two organizations is the first step taken between management and labor with the aim of bringing about an orderly reconversion to peacetime construction work.

"Representatives of the two organizations have met in Washington for the purpose of exploring the problems confronting the construction industry in the reconversion and post-war period and have arrived at a four-point program which is general in nature. But details of the program will be worked out by committees of the two organizations.

"Appointments to these committees will be announced.

"Construction is the largest major industry which will be able to turn quickly to peacetime work. It is being looked upon by the nation to furnish a large volume of employment during the reconversion period and to execute a volume of work in the post-war period of about ten percent of the national economy. The relationships between labor and management must be such that this work may be undertaken without any loss of efficiency due to labor-management problems."

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# Uniform Pressure . . .
# Water Reserve . . .
# with
# HORTON ELEVATED TANK

● *The two Horton elevated water storage tanks illustrated here provide gravity water pressure in the Kalamazoo, Mich. water distribution system. The one at left has a capacity of 750,000-gals. and is 102 ft. to bottom. The tank above has a capacity of 350,000-gals. It is 85 ft. to bottom.*

● In 1939 the City of Kalamazoo, Michigan, installed two Horton elevated storage tanks as a part of a complete improvement project representing an extension to its water distribution system. This new area, an isolated residential section, occupies about three square miles. The installation of the two elevated tanks, one of which holds 350,000 gals., and the other 750,000 gals., their capacities and location were based on thorough engineering studies of this area where elevation varied considerably.

The two new Horton elevated storage tanks are filled by three automatically-controlled pumps, the operation of which is governed by the level in the 750,000-gal. tank.

While the depth of the water in the 350,000-gal. tank follows the water level in the larger tank, an altitude valve prevents the 350,000-gal. tank from overflowing should a large fire create an unusually heavy water demand and thereby disturb the hydraulic balance.

The two elevated tanks not only serve the 3-sq. mi. high elevation area but also help to provide more uniform water pressure, fire protection and water reserve for all of Kalamazoo, Mich.

If you are planning improvements in your present water distribution system, write for information on Horton elevated storage tanks.

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Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PENNSYLVANIA

# Water Supply and Treatment

## *The Water and Power Department of Los Angeles Announces Two Promotions*

ON May 1, Burton S. Grant assumed his new post as Assistant Chief Engineer of Water Works for the Los Angeles Water and Power Department and William S. Peterson took up his duties as Assistant Chief Electrial Engineer, according to the announcement of Samuel B. Morris, General Manager and Chief Engineer of the department.

*Burton S. Grant*

Mr. Grant succeeds to the position held by Laurance E. Goit, now head of the municipal water system, and Mr. Peterson will fill the vacancy caused when Charles P. Garman was promoted to become head of the power system.

Mr. Grant has been an employee of the city since 1925. He has filled the positions of Office Engineer, Personnel Officer of the Water System and Assistant Engineer of the Aqueduct Division, and in 1940 became head of the division. As division head, he was responsible for the operation, maintenance, and hydrography of all the aqueduct system north of the San Fernando Valley.

*William S. Peterson*

Mr. Peterson came to the department in 1922 as a mechanical-electrical draftsman. He is best known for his work in connection with the designing of the three 287,500 volt transmission line circuits from Boulder Dam to Los Angeles. From December, 1943, until now, Mr. Peterson served as the head of the Design and Construction Division. He is the author or co-author of many technical papers prepared for the American Institute of Electrical Engineers, including one which received a national award. He has served on several occasions as consultant to the Federal Government on power matters, including the TVA project.

## *OWU and Water Works*

ACCORDING to Bayard F. Snow, Regional Engineer of the Water Division of the Office of War Utilities, three phases of the War Production Board's current program should interest water works men:

*Revocations and Relaxations:* Since V-E Day, emphasis has been shifted to relaxation of control, to take effect as fast as conditions permit. It must be noted, however, that the release of a WPB control or the lifting of a WPB order does not constitute an assurance that all of the materials, manpower, and plant facilities desired will be available. There are several orders or revisions of orders which make it possible to obtain materials which have heretofore been restricted, but military orders already scheduled will prevent any deliveries to civilian consumers until military orders are met. Mr. Snow recommended that water works men who actually need something which they cannot obtain, call on the Water Division.

A number of materials are now, and are expected to continue, in short supply. Many metals, notably steel, will probably remain short for some time. Sheet steel may remain tight even longer. Forest products are short and will continue so. Cast iron pipe fittings have been slow. Bronze case meters are now permitted in a greater range of sizes, but productive capacity is limited. Electrical controls and switchgear are especially tight and should be simplified or deferred wherever possible.

The importance of considering others was urged. Place orders only for materials needed within a reasonable period, such as two or three months, thus avoiding unnecessary stock-piles of materials. Secondhand lumber, rented steel panel forms, or ply-forms should be used for concrete forms.

*Priorities:* Priorities permit sharing available materials. Upratings mean displacement of other orders. Placing of orders as early as possible and with due consideration to the selection of a producer who can meet the required delivery dates is essential.

*U-1 Order:* The U-1 Order is a powerful implement for water works men. The scope of their authority under this order has been broadened repeatedly so that it now covers many projects formerly requiring application to Washington. The latest revision (May 12, 1945) permits minor plant additions for "rendering service in accordance with sound and economical operating standards." Dollar limits for materials for minor plant additions have been raised from an original $500 and $1,500 for above-ground and below-ground construction to $25,000.

Mr. Snow paid deserved tribute to the water works men and manufacturers who have made possible these relaxations.

## *Items of Special Interest to Water Utilities*

1. Order L-154, Schedule 1, has been revoked. All bronze meters can now be made in all sizes, subject to allotment of materials. It is important to note that while an increase in meter production may be expected, it is still advisable that orders for meters be staggered so that the load on producers will not be too heavy.

2. M-9-c and M-9-1 orders also have been rescinded. These orders limited the use of copper tubing to service connections and service line fittings for use underground.

3. M-126 has been revoked and the filing of appeals for steel tanks less than 100 feet high is no longer necessary.

4. WPB Order U-1 has been amended as of May 12. (See your copy of the Administrative Letter which was recently sent to all water utilities.)

5. In general, the Office of War Utilities will look with favor on receipt of applications from water utilities on new construction work for correction of deficiencies in their systems so that accepted standards of operating practice in the utility field may be maintained. Orders for projects which have been rated will be given preference by producers over orders for unrated projects.

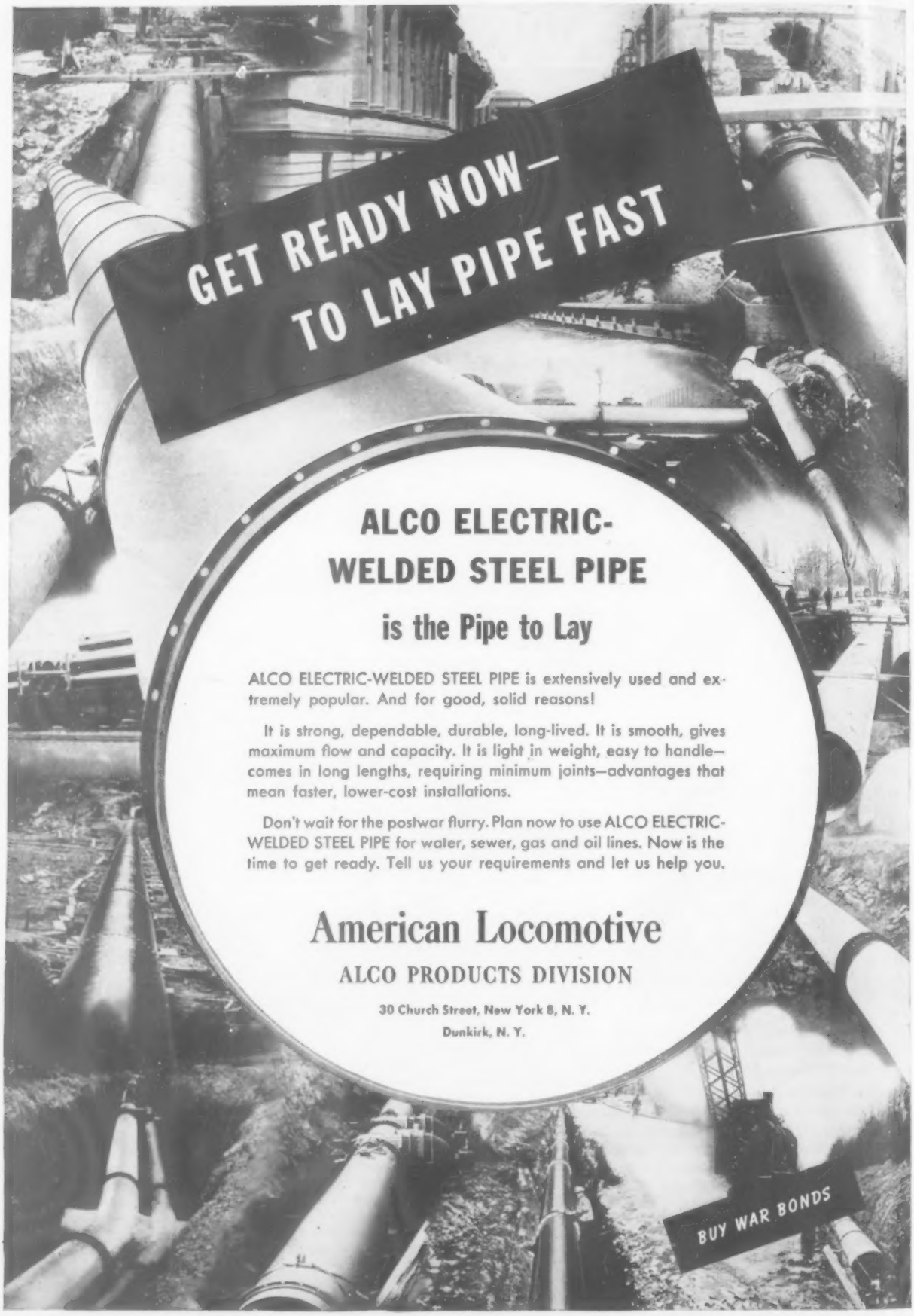
6. CMP will continue through the third quarter of 1945 but will be "open-ended" to permit delivery after July 1 of controlled materials without a specific allotment authorization where open mill capacity is available.

7. It is quite likely that such items as lumber, switchgear, rubber, and well-drilling equipment may be in tight supply for many months. Utilities planning construction should bear this in mind.

8. The Water Division is organized to help utility projects obtain deliveries of materials in short supply for urgent projects. It would be to the interest of utilities to work in close contact with manufacturers so that serious delays in delivery can be avoided, if possible. If special upratings are necessary, utilities should notify the Water Division giving full information as to the supplier, date, and number of the order, priority rating extended and the promised date of delivery by the supplier with this rating.

Relaxations and revisions of WPB orders and regulations are occurring daily and because of these rapid changes, certain of the information given above may be invalidated in the near future.

WALTER L. LEACH
Acting Director, Water Division
Office of War Utilities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# Sewerage and Sewage Treatment

## *West Columbia, Texas, Has New Sewers*

ACCORDING to a report by J. S. Williams, City Manager, West Columbia, Texas, has completed—with the aid of Federal Works Lanham Act funds—the construction of 36,000 feet of sewers and two lift stations. These mains consist of 6,000 feet of 8-inch cast iron force main and 6- to 12-inch mains.

This city, which served as the first capitol of the Republic of Texas before it became a state, has a peacetime population of 1,573 and in 1942, according to a census taken in connection with its application for federal assistance, had had an influx of 800 war workers and their families or a total increase of 1,647, making its present population 3,220.

Originally the city applied to the War Production Board for the priority to construct sewage treatment facilities, but after a complete investigation WPB felt it wise to confine the project to the construction of new sewers and two lift stations. The Federal Works Agency furnished $73,000 for the project and the city furnished the remaining $17,083 by issuing time warrants for $8,000 and providing $9,083 in cash. The project serving about 375 residences was completed and put into service on August 1, 1944.

## *Sewer Rentals Finance Construction and Operation in Virginia Cities*

FREDERICKSBURG, Radford, Richmond, and Williamsburg, four Virginia cities, are financing the construction or the operation of their sewerage systems by levying sewer service charges.

The charges in Fredericksburg are $4 a year per house or connection, according to the American Public Works Association, and for many years sewer construction has been paid for out of the general treasury. No bonds for sewers have been issued since 1901 in Fredericksburg.

Sewer rental charges on a scale graduating from 50 cents a month per connection for 10,000 gallons of water or less, up to $2 monthly for more than 150,000 gallons or more are levied by Radford. In addition, a charge of $10 is made for each connection. Sewer rentals are collected by including charges on the monthly water bill in this municipality.

In Richmond, rental charges are based on a levy of 10 cents per linear foot of property front per year. Williamsburg charges $1 per connection per quarter.

Sewer rental charges are imposed on users outside the corporate limits by four other Virginia cities—Charlottesville, Danville, Harrisonburg, and Portsmouth.

Norfolk has no system whatever of rental charges now, but is considering adopting a rental plan when the sewage treatment plants now in the planning stage are built.

## *WPB Revisions Affecting Sewerage Facilities*

THE principal change in Preference Rating Order P-141 relates to the increase from $1,500 to $25,000 in the net material cost of sewerage jobs, including buildings, which can be built without War Production Board authorization. An AA-3 rating and the allotment symbol MRO-P-141 is assigned for materials for such construction.

Buildings for such sewerage systems were formerly controlled by Order L-41. A revision of that order eliminates any reference to buildings so that such construction can be incorporated under P-141.

The AA-1 rating for materials and equipment for maintenance, repair, and operating purposes remains the same.

Another important change relates to the exclusion from the definition of inventory, paragraph (a) (11), of materials to be used for plant additions. On the basis of this change, we thought it unnecessary to raise the $5,000 inventory limit now in the order.

In view of the increase to $25,000, Form WPB-3445 formerly required under paragraph (g) (2) (v) is no longer necessary for the types of projects described under paragraph (g) (2).

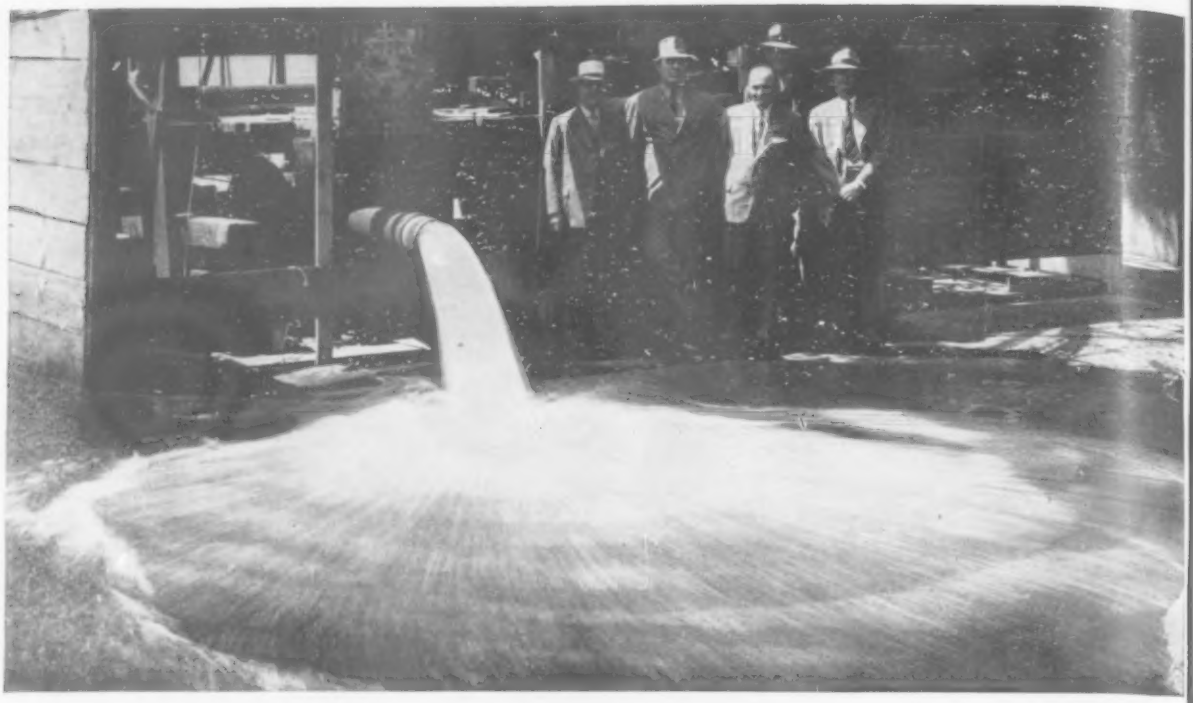
There are a few other minor changes, such as the omission of the provision in paragraph (g) (1) restricting the use of iron or steel pipe in house connections, and the omission in paragraph (f) (3) (iii) of the report when deliveries and withdrawals exceed the base period limits due to maintenance and repair occasioned by acts of public enemy, sabotage, explosion or by fire or flood.

M. D. SULLIVAN
Chief, Sewerage and Sanitation Section Projects Branch
Government Projects, Equipment and Supplies Division
Office of Civilian Requirements

EDITOR'S NOTE: The changes in regulations are undergoing a day by day revision which it is anticipated will continue as more and more materials become available for civilian use.

### *Cleveland's Easterly Sewage Treatment Plant*

*The largest of Cleveland's sewage treatment plants is its easterly plant designed to handle 123 mgd which embodies the activated sludge process. This view shows the plant's Dorr clarifiers in the foreground, right, and the aeration tanks to the left. Lake Erie, which may be seen just beyond the plant, receives the effluent from the plant.*



# WATER SYSTEMS

## *For Cities, Towns and Industries*

### LAYNE PUMPS

Layne Vertical Turbine Pumps are obtainable in capacities from 40 to 16,000 gallons per minute. They are sturdily built of fine quality materials throughout and give years of faithful service. Their efficiency saves many dollars annually on power cost. Write for fully illustrated Pump Catalog.

●

### LAYNE
### AFFILIATED COMPANIES

Layne-Arkansas Co., Stuttgart, Ark. ✱ Layne-Atlantic Co., Norfolk, Va. ✱ Layne-Central Co., Memphis, Tenn. ✱ Layne-Northern Co., Mishawaka, Ind. ✱ Layne-Louisiana Co., Lake Charles, La. ✱ Louisiana Well Co., Monroe, La. ✱ Layne-New York Co., New York City and Pittsburgh, Pa. ✱ Layne-Northwest Co., Milwaukee, Wis. ✱ Layne-Ohio Co., Columbus, Ohio ✱ Layne-Texas Co., Houston and Dallas, Texas ✱ Layne-Western Co., Kansas City, Mo., Chicago, Ill., and Omaha, Neb. ✱ Layne-Western Co., of Minnesota, Minneapolis, Minn. ✱ International Water Supply, Ltd., London, Ontario, Canada ✱ Layne-Hispano Americana, S. A., Mexico, D. F.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Practically all of Layne's emergency War Plant Water System construction has been finished. Essential Civilian Industries, Cities, Towns and Villages are next in line. The entire Layne organization is now devoting almost full time to peace-time Water System installation. This means that Industrial, and City Officials—Engineers and Plant Superintendents, can now proceed with their Well Water System development plans.

The natural choice of Well Water Systems and Pumps will be those built by Layne. No other make can possibly provide so many outstanding and thoroughly proven features of sturdy construction, long lasting quality or unmatchable efficiency.

Layne builds Well Water Systems of all sizes to fulfill the needs of the largest industries and cities down to those of the progressive little village. Based on low operating cost, and long life, Layne Well Water Systems are the finest investment an Industry, City, Town or Village can make.

For late catalogs or the services of a Layne Engineer, address Layne & Bowler, Inc., General Offices, Memphis 8, Tenn.

LAYNE

## WELL WATER SYSTEMS
## VERTICAL TURBINE PUMPS

# Public Safety

## *Pennsylvania Police Chiefs Favor Two-Man Patrol Cars*

TWO-THIRDS of Pennsylvania's forty-two police chiefs prefer two man to one-man patrol cars for police duty, the American Municipal Association reports. Four chiefs stated a preference for the one-man car, while nine expressed no opinion.

Chief of the Lebanon police department believes it too difficult for one man to drive and handle a law violator at the same time. The chief of Wilkinsburg considers the two-man car more effective because one man can watch the radio while the other handles the call or complaint. The chief of Norristown considers the two-man car more efficient, but believes that a car built to separate the officer from the law violator would be as effective with one man as with two. The chief of Haverford township states that the two-man car is more useful in suburbs and a one-man vehicle more satisfactory in urban areas.

The police departments, which were surveyed by the Pennsylvania Chiefs of Police Association Bulletin, have a total force of 1,226 policemen and 127 patrol cars of which 106 are equipped with police radios. Ninety-eight of these radios are two-way and only eight are one-way. There are 74 two-man cars and 40 one-man patrol cars in use.

## *Stationary Fire Pumps*

THE development of special pumps for fire service in buildings was fostered largely by the National Board of Fire Underwriters and the Associated Factory Mutual Insurance Companies in conjunction with various pump manufacturers.

In many modern buildings fire pumps are automatically started and controlled. One system in use embodies a standpipe and elevated tank filled with water, the purpose being to keep the closed hose valves constantly under water pressure. In case of a fire, opening any hose valve causes the standpipe pressure to drop. This drop in water pressure brings electrical apparatus into action, which starts the fire pump motor. After the fire has been extinguished and all of the hose valves closed, the standpipe pressure rises again and stops the pump.

An automatic sprinkler system is often used in addition to the regular hose outlets. In this system a network of sprinkler outlets covers the ceilings in the building. Pressure is constantly maintained in the pipes supplying these sprinklers. If a fire occurs, the ascending heat melts thermostatic elements in the sprinklers, releasing a blanket of water on the blaze. At the same time, the fire pump is automatically started and an alarm is sounded.

Fire pumps in five sizes, delivering 500, 750, 1,000, 1,500, and 2,000 gallons per minute under 100 pounds per square inch pressure, are built by Worthington Pump and Machinery Corporation, Harrison, N. J.

Once a year the Underwriters review all of the tests made by us on fire pumps sold during that period. In addition, each pump is tested again by the local Insurance Rating Bureau at the installation site.

The final test of a fire pump occurs when a fire breaks out.

C. R. MOCKRIDGE
In *Worthington News*

## *Those Capacious Coaches*

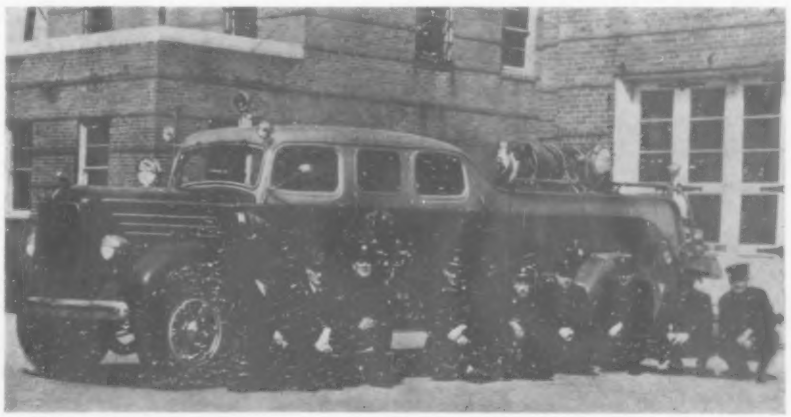
FROM 1941 to 1944 the number of street cars increased 1½ percent and the number of their passengers 57.2 percent. Silent electric trolley coaches or trackless trolleys with a 17.4 percent increase in vehicles carried 93.7 percent more passengers. Subways and elevated roads with no increase in vehicles carried 8.1 percent more passengers. Motor buses with a 30 percent increase in vehicles carried 93.8 percent more passengers.

## *Will Ban Storm Parking*

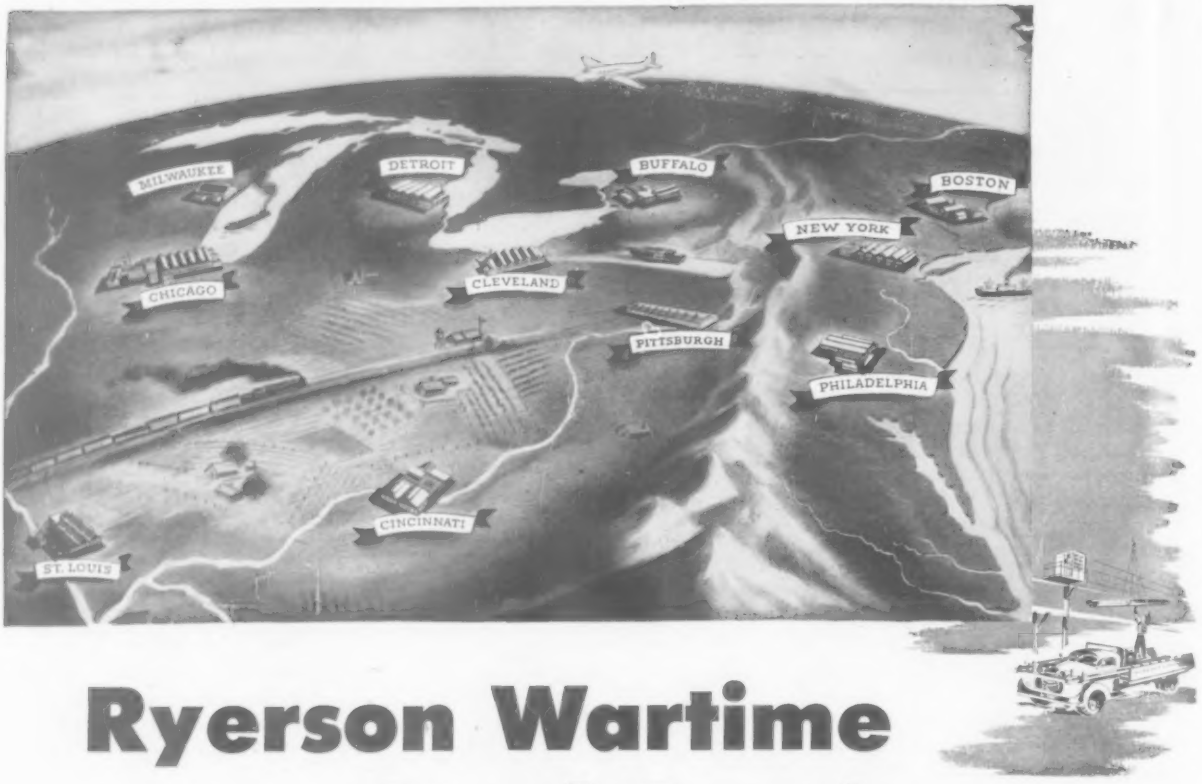
HARASSED by complaints over the condition of its streets, the City Council of Newburgh, N. Y., has voted to provide a double-barreled weapon against parking which interferes with snow-removal operations, according to the New York State Conference of Mayors. The Council voted to ask Corporation Counsel Daniel Becker to draft ordinances designed not only to punish owners of cars parked illegally, but also to permit the Street Department to remove cars at the expense of the offending owners.

## *Traffic Institute Opens Spring Classes*

TWENTY-SEVEN police officers, including one from China, are attending the 1945 Spring class at the Northwestern University Traffic Institute. The four-month course in traffic police administration opened in February and continues through June 13. Fifteen municipal, two county, and six state enforcement units in the United States are represented in the class, as well as the police department of Chungking, China. Two hundred and twenty-one men have been graduated from the Institute's administration course since its inception in 1936. Applications for the 1945 Fall course, which will start September 10 and end January 26, 1946, are now being accepted. Write to the Institute.



*Orie A. Hand, Chief of the Fire Department of Lincoln Park, Mich., sends this photograph of Lincoln Park's new 750-gallon Mack triple combination pumping engine—"the first piece of apparatus we have purchased since 1925," he says. The personnel of the department consists of nine men working out of one station, serving 20,000 persons in an area of 5.93 square miles. The Department also serves the Village of Allen Park, population 6,000, area 6.25 square miles.*




# Ryerson Wartime Steel Service

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Ryerson stands for steel quickly from stock—and has since our Company was founded 102 years ago. Now eleven strategically located Ryerson Steel-Service Plants serve the nation's principal steel-using areas with anything from a single piece to many carloads — bars, shapes, structurals, plates, sheets, tubing, etc. — carbon, alloy, Allegheny, Stainless and tool steel.

At present our service cannot always be as fast nor our stocks as complete as under normal conditions. Nevertheless, stocks are large and deliveries generally satisfactory. The latest Ryerson stock list describes our complete line — more than 10,000 kinds, shapes and sizes of steel. This buying reference is a veritable steel user's "book of knowledge." It gives descriptions, sizes, weights, specifications and cutting extras for every kind of steel. Your nearby Ryerson plant will be glad to furnish you a copy. Use it for a guide to Ryerson stocks—your surest steel source.

JOSEPH T. RYERSON & SON, Inc., Steel-Service Plants: Chicago, Milwaukee, Detroit, St. Louis, Cincinnati, Cleveland, Pittsburgh, Philadelphia, Buffalo, New York, Boston.

RYERSON CERTIFIED STEELS

**RYERSON STEEL**

# Refuse Collection and Street Cleaning

## *Smaller Crews—Greater Loads with New Garbage Trucks*

THE following is a report of the activities of the Refuse Collection Department by James J. Courtney, Head of the Division of Sanitation, Department of Public Works, Worcester, Mass., in which he emphasizes the part played by its Load-Packer trucks:

"Whereas previously we had used four- and five-men crews to collect garbage, when we obtained our Gar Wood Load-Packers we were able to reduce each crew by one man. Not only was this possible but the new trucks provided a 50 percent increase in capacity per load. Not so obvious but none the less real were other benefits which we realized resulted from the use of the new trucks. We found that our workers suffered less fatigue, and had a smaller number of injuries because the loading height is lower on the new trucks than on the old. The closed bodies of the Load-Packers are more sanitary than the old open type and prevent the spilling of garbage onto the street. In contrast to these very definite benefits, we did find that the packer mechanism required considerable attention and, as a result, the cost of maintaining the new trucks is considerably greater than on our previous models. However, the increased cost is more than outweighed by the benefits derived.

It goes without saying that the new trucks are of great benefit in promoting the morale and efficiency of our workers. Because we realize that these two qualities are interdependent we have endeavored by various means to achieve better working conditions for our employees. We have made several improvements along this line over the past few years, as follows:

1. Rubber storm suits (pants and jackets with parkas which are government rejects with only minor flaws) were purchased from a Navy supplier for each of our collectors.

2. Ice creepers, pronged devices that fasten to shoes, are furnished each crew member so that he may negotiate icy streets in safety.

3. To save time and the expense of travel to the city's garages each worker is assigned to a route near his home and is met every morning by the truck driver at a designated point and dropped off at the same place when the trucks are loaded for the last time at night.

4. Collectors work a 5-day week of 44 hours and are paid for 48 hours at $.72½ per hour or $34.80 per week. Each worker is allowed two weeks' sick leave and two weeks' vacation.

Our policy has always been to make every effort to insure regular collections. We also endeavor to adjust promptly every complaint that is made. Drivers make a daily report of the area they have covered and the mileage driven. Each load of garbage is weighed and is sold to farmers for hog feed.

## *Akron, Ohio, Sidewalk Cleaning Device*

ACCORDING to G. Soderberg, Highway Engineer of Akron, Ohio, that city obtained the street flusher shown here in 1938. This unit furnished by the Municipal Supply Co. of South Bend, Ind., is mounted on an Autocar chassis and has a capacity of 2,100 gallons. The flusher is equipped with a device for sidewalk cleaning. This attachment is on the right hand side of the tank just back of the pump and engine housing and consists of 1½-inch pipe. The pipe, vertical to the body, extends to a height level with the top of the tank. Attached to this is a horizontal pipe 6 feet long. This pipe is so constructed that it will swivel to extend over the sidewalk and is equipped with 25 feet of 1½-inch hose and a flushing nozzle fitted with an elongated slot as shown. The control device for regulating the flow is installed in the cab.

*Using the sidewalk cleaning device*

LEFT: *Garbage collection crew at work loading one of Worcester's new Load-Packer refuse collection trucks.* RIGHT: *Worcester sells the garbage it collects to farmers for hog feed. Here the refuse trucks are being emptied into the farmer's trucks.*

# HERE ARE RESULTS

## Effected with DORRCO Flocculators

These percentages are actual figures reported by a city water works superintendent for the first three months after Dorrco Flocculators were installed.

The Dorrco Flocculator is a mechanical water conditioner which, by a slow, gentle series of "barrel rolls," causes individual particles in the water to impinge on one another, producing heavy, dense flocs that settle rapidly. The Dorrco Flocculator increases plant capacity and improves water quality. It operates at low power consumption, often paying for itself in a few years.

The Dorrco Flocculator can be fitted into existing plants at relatively low cost; it can be arranged to fit tanks of various sizes or shapes.

Send for the Dorrco Flocculator Bulletin for other interesting case histories; or call a Dorr Engineer to estimate the savings and increased efficiency that Dorrco Flocculators can achieve in your plant.

**Additional Feature for Maintenance Economy**

The Dorrco Flocculator utilizes an enclosed dry-well drive. Drive mechanism is not exposed to water, and is accessible at all times.

Blueprint Now! FOR TOMORROW'S NEEDS

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# Stop--Check and Mail

***Please check over the list of interesting catalogs below obtainable free of charge and either write direct to the manufacturers for their literature, or, if you prefer, put a circle around the identifying numbers below to indicate the catalogs you want, mail this coupon to The American City Magazine, 470 Fourth Ave., New York 16, and we will see that catalogs are sent to you without expense or obligation on your part.***

6-45

873 874 875 876 877 878 879 880 881 882 883 884
885 886 887 888 889 890 891 892 893 934
895 896 897 898 899 900 901 902 903 904 905
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927 928 929 930 931 932 933 934 935 936 937

Name ---------- Position ----------

Address ----------

## Metered Parking

**873.** Officials in charge of traffic and parking control who are contemplating post-war metered parking will find helpful a descriptive folder on the advantages of this method entitled "Metered Parking—Today's Answer to Tomorrow's Traffic Control Problem," just published by The Dual Parking Meter Co., Harter Bank Bldg., Canton 2, Ohio. This 4-page folder describes the benefits of metered parking; tells some of its interesting history, and touches upon a few of the special features of Dual Automatic parking meters. There is also in it a list of cities which installed these parking meters prior to the war.

## Water Works Brass Goods

**874.** Bulletin WW42 from A. Y. McDonald Mfg. Co., Dubuque, Iowa, will be of interest if you are laying out plans for post-war activities. This bulletin illustrates and gives specifications on corporation stops, curb stops, goosenecks, and other items of water works equipment.

## Facts on Automotive Jobbers

**875.** The National Standard Parts Association, 35th Floor, 8 South Michigan Ave., Chicago 3, Ill., brings to you the story of the automotive wholesaler and how he kept the nation's automotive equipment on the job during the war. "Meet the Man Who Really 'Kept 'Em Rolling'," points out to officials who have had gasoline and diesel motors, pumps, compressors, trucks, buses, and tractors serviced and repaired the important role of the independent automotive service wholesaler.

## Portable Compressors

**876.** Davey portable compressors incorporate such features as air-cooled design, aluminum alloy cylinder heads, carbon-free stainless steel valves, one-piece welded steel frame, and automotive-type steering. Catalog E-172 available from Davey Compressor Co., Kent, Ohio, gives full information on Davey compressors, heavy-duty truck power take-offs, and pneumatic saws.

## Prevent Tank Rusting

**877.** A discussion of the Rusta Restor cathodic or electrical method of protection against rusting of water tanks, piping, and steel structures of all kinds is contained in Bulletin No. R-181 from Rusta Restor Div., The Johnston and Jennings Co., 861 Addison Rd., Cleveland 14, Ohio. Three interesting laboratory experiments demonstrate the principles of this system which electrically neutralizes the galvanic action on the tank. The bulletin points out that operating costs are low because the unit uses the current of only a single light bulb at safe, low voltages.

## Short Turning Street Sweeper

**878.** Austin-Western Co., Aurora, Ill., will send you full details about its Patrol Sweeper. Dustless operation, short turning radius, and its noiseless operation are factors that make this machine attractive to municipalities anxious for a cleaner and healthier community.

## Cable Control Bulldozer

**879.** The Baker Manufacturing Co., Springfield, Ill., has issued a new catalog No. 849 containing complete details and specifications on its new line of cable controlled bulldozers and gradebuilders. The new models emphasize ease of operation, low maintenance, and adaptability to field conditions, and are built with single and double drum rear end power control units and single drum front end power control units. A special trunnion design permits the blade on both bulldozers and gradebuilders to be tilted as much as 12 inches at either corner, increasing their usefulness for crowning, ditching, and grading.

## Pumps, Hydrants, and Gate Valves

**880.** Water works officials will be interested in bulletins from Manistee Iron Works Co., Manistee, Mich., on its centrifugal pumps, fire hydrants, and gate valves. Single-stage, double-suction pumps from 75 to 20,000 gpm capacity and multi-stage pumps from 50 to 3500 gpm capacity with heads up to 1600 feet are also listed.

## Sewer Cleaners

**881.** To help you in your efforts to keep sewer lines clean you will be interested in OK Champion sewer cleaners. Champion Corporation, 4716 Sheffield Ave., Hammond, Ind., will send you literature about the two sizes of OK Champions that are available for immediate shipment.

## Public Safety Lighting

**882.** Is your municipality adequately lighted to make it safe for all citizens? Westinghouse Electric & Manufacturing Co., P. O. Box 868, Pittsburgh 30, Pa., will send you a copy of "Target for Tonight," the story of good public safety lighting, which contains many facts helpful to civic leaders.

## Pressure Concrete Construction

**883.** Bulletins available from Pressure Concrete Co., First National Bank Bldg., Florence, Ala., discuss the properties and advantages of Gunite, which is sand and cement applied pneumatically. The booklets illustrate its use for repairs or new construction on prestressed tanks, for reservoir lining, dam repairs, tunnel lining, and sewer repairs.

## Palatable Water

**884.** Are you prepared to provide palatable water if any change should arise in your raw water supply? Industrial Chemical Sales Division, West Virginia Pulp and Paper Co., 230 Park Ave., New York 17, N. Y., will send you data on Aqua Nuchar Activated Carbon which provides tasteless and odorless water because it removes by adsorption all elements which cause unpalatability.

## Portable Tower for Servicing Lights and Signals

**885.** To simplify signal, street lighting, heavy line maintenance work you will be interested in the Bird-White tower lift. Bird-White Co., Dept. AC, 3119 West Lake St., Chicago 12, Ill., will send you the Tower Lift Bulletin discussing this lift with an elevation up to 28 feet. The control for raising and lowering is operated from the lift platform, and the equipment can be adapted to a streamlined or open back utility truck.

## Reflector Material for Highway Signs

**886.** Reflective signs that can be read with ease both night and day, and at a distance or close-up will increase the safety record of motorists in your community. Write Minnesota Mining and Manufacturing Co., St. Paul 6, Minn., for details on Scotchlite, the reflective sign material for all types of highway signs.

## Water Treatment Equipment

**887.** If you need equipment for producing clear, soft, and iron-free water in your municipality, you will want a copy of Bulletin 1824 from Infilco, Inc., 325 W. 25th Pl., Chicago 16, Ill. This deals with the Accelator which clarifies, softens, stabilizes, removes color, and takes out iron.

## Asphalt Types of Road Construction

**888.** Step-by-step description of road, street, and airport construction where asphalt is applied by pressure distributor trucks is the subject of a new 24-page booklet published by The Texas Co., Asphalt Sales Dept., 135 E. 42nd St., New York 17, N. Y. The book explains how to construct standard and modified types of Asphalt Penetration Macadam paving; describes the road-mix method of building low-cost asphalt surfaces; and outlines the proper procedure for surface-treating roads with asphalt surfacing material, emulsified asphalt, and asphalt cement.

(*Continued on page 18*)

# Stop--Check and Mail

USE COUPON ON PAGE 17

(Continued from page 17)

## Concrete Pipe Forms

**889.** For building pipe in your own municipality, you will be interested in securing information from the Quinn Wire & Iron Works, 1623 12th St., Boone, Iowa, on its heavy duty pipe forms. Sizes are available for any diameter pipe from 12 to 84 inches, tongue and groove, or bell end pipe.

## Mechanical Broom Fibres

**890.** Do you know about the quality of the broom fibres you use in the core of your mechanical brooms? The Otto Gerdau Co., 82 Wall St., New York 5, N. Y., will send you information on its broom fibres and their long wearing qualities.

## Bronze Memorials and Tablets

**891.** General Bronze Corp., 34-44 Tenth St., Long Island City 1, N. Y., offers to municipalities an interesting and helpful brochure on its bronze memorials and honor roll tablets. Though tablets will not be available until after the war, you can make your choice now.

## Pipe and Cable Finders

**892.** M-Scope pipe and cable finders are used by municipalities for the many problems involved in the development, operation, and maintenance of buried pipe and cable for airports, public utilities, and sewerage and water companies. Fisher Research Laboratory, Palo Alto, Calif., has issued a new operating manual which illustrates and describes clearly the many tasks the pipe-finder will perform.

## Destroy Weeds Chemically

**893.** The Dolge weed killer does a complete job of killing unwanted growth because it kills roots and tops, and prevents the seeds from maturing. Booklet D12 is available from The C. B. Dolge Co., Westport, Conn., on this chemical weed destroyer.

## Tractor Excavator

**894.** Earth moving and material handling jobs in your community can be easily handled with a Traxcavator. The Trackson Co., Dept. AC55, Milwaukee 1, Wis., will send you full details on this machine which can dig, grade, load, carry, and do many other earth-moving jobs easily.

## Hydrant for Non-Freezing Climate

**895.** Fire hydrants suitable for non-freezing climate are the subjects of "Hydrants By Greenberg" offered by M. Greenberg's Sons, 765 Folsom St., San Francisco 7, Calif. One of the hydrants illustrated is the California-type hydrant constructed with globe-type valves on all outlets.

## Wells for Large Water Supply

**896.** Water works officials interested in developing large water supplies from sand and gravel formations will be interested in literature from Kelly Well Co., Inc., Grand Island, Neb. The company points out that Kelly wells develop all available water, sand-free, to their full capacity.

## Fibre Pipe for Non-Pressure Services

**897.** The Fibre Conduit Co., Dept. A, Orangeburg, N. Y., will furnish bulletins giving physical characteristics and properties of Orangeburg pipe for non-pressure services such as sewer connections, irrigation lines, waste drainage, septic tank, filter beds, and foundation drains. The pipe will not corrode or tuberculate.

## Standby Power Equipment

**898.** Officials in charge of fire, flood control, sewage works, and water works interested in installing emergency power equipment will want the facts on the Buffalo engine. Buffalo Gasolene Motor Co., Dept. AC-55, Buffalo 13, N. Y., will send specifications and data on the design and installation of its power equipment.

## Air-Cooled Power

**899.** In making plans to provide power for machines and tools in your plants and shops you will want data on the performance of four-cycle engines built by Briggs & Stratton Corp., Milwaukee 1, Wis. Information on design points out the quality and accuracy of these motors. The air cooling system maintains correct operating temperatures under all conditions.

## Exact Chemical Feeding

**900.** To provide accurate water treating methods and guard against dangerous undertreatment or wasteful overtreatment, you will find Bulletin SAN-1 of %Proportioneers, Inc.%, 99 Codding St., Providence 1, R. I., of help. This is a discussion of the Chem-O-Feeder which, controlled by meter, varies the feeding of the chemicals in proportion to the water flow.

## Clay Pipe

**901.** Have you the latest facts on clay pipe used in highways, airports, and sanitary sewers? National Clay Pipe Manufacturers, Inc., 111 W. Washington St., Chicago 2, Ill., will send you the latest information and engineering data about its chemical-proof and abrasion-proof qualities.

## Calcium Hypochlorite Safeguards Water

**902.** Water works officials will be interested in the latest edition of "Hypo-Chlorination of Water" being offered by The Mathieson Alkali Works, (Inc.), 60 East 42nd St., N. Y. C. 17. This fully illustrated brochure is a complete reference manual on the use of high-test calcium hypochlorite in the modern practice of safeguarding water supplies. It covers all phases of standard sanitation practice, including instructions for emergency use.

## Radiotelephone Systems

**903.** Radiotelephone systems will help to prevent delays in locating fires and ordering equipment to the scene of a fire. Full details are available from Galvin Mfg. Corp., Chicago 51, Ill., on Motorola FM two-way radios which permit fire headquarters to speak directly to mobile units.

## Flush Streets Clean

**904.** Street flushers in your community will help you provide clean streets. E. D. Etnyre & Co., Oregon, Ill., will send you data on its street flushers which with a light spray washes dust out of the central traffic zone, and a high-pressure stream of water forces all the waste into the gutter.

## Underground Installation of Pipe

**905.** Underground pipe installations can be speeded by use of the Hydrauger. Hydrauger Corp., Ltd., 116 New Montgomery St., San Francisco, Calif., will send you full details on this equipment which does horizontal drilling controlled by sights through sand, clay, conglomerate, rock, and shale without digging ditches or causing traffic hazards or destruction to pavements.

## Aggregate Spreader

**906.** For information on the spreading of aggregate, from sand to one inch stone, municipal officials will be interested in a folder from Good Roads Machinery Corp., Kennett Square, Pa., on the Berna Champion spreader. Discussing the many features of this equipment, the folder points to the distribution, controlled by micrometer screw, to the fact that 95 percent of the load is carried by the box bed without pressure on spread roll, and to the freedom from bridging or clogging of material.

## Insure Ample Water Supply

**907.** Layne water systems, and Layne turbine pumps can be used by communities to step up inadequate and inefficient water systems. Late catalogs, illustrated bulletins, and further facts are available from Layne & Bowler, Inc., Memphis 8, Tenn.

## A Finisher for Smooth Streets

**908.** On street and road construction work, officials want a well-packed surface without springy spots. The B-G Finisher Catalog available from Barber-Green Co., Aurora, Ill., discusses the work of a Barber-Greene Tamping-Leveling Finisher and how it provides a smooth firm surface.

## Automatic Multiplication

**909.** Automatic calculators in municipal departments help simplify figure work. You set the two factors, one in the keyboard and one in the multiplier unit, press the motor bar, and the machine automatically clears the dials, positions the carriage, and performs the problem. Catalog and instruction book are available from Friden Calculating Machine Co., Inc., San Leandro, Calif.

## Metal Street Name Signs

**910.** Rust-proof metal street name signs are now available from the Cataphote Corp., Toledo, Ohio. Write this company for full details on these signs and on metal traffic signs with reflector buttons for day and night visibility.

## Centrifugal Pumps

**911.** Water works superintendents interested in centrifugal pumps will want data from DeLaval Steam Turbine Co., Trenton 2, N. J., on the efficiency record of its horizontally split case centrifugal pumps.

## Photo-Copy System

**912.** Do your municipal offices or shops have to prepare exact copies of letters, blueprints, tracings, financial records, drawings, or similar items? American Photocopy Equipment Co., 2849 N. Clark St., Dept. EB-55, Chicago 14, Ill., will send you a folder showing how the A-PE-CO can be used in your office by untrained employees to produce copies that are easy to read and are legally acceptable.

## Architectural and Engineering Service

**913.** An interesting new folder has just been published by Robert and Company, Atlanta 3, Ga., discussing the organization and activities of this company. This illustrated booklet shows the type of present and future services available from this organization whose complete facilities permit it to take over any architectural and engineering task at its inception, plan and supervise it, and carry it through at its own plant.

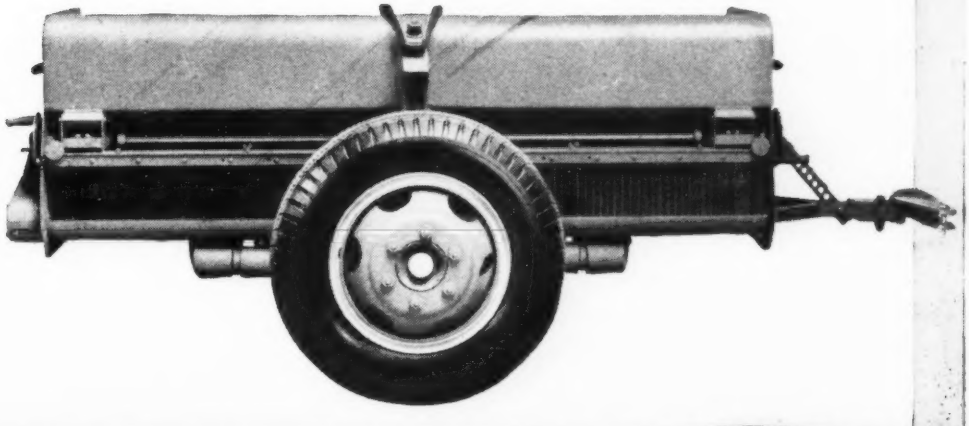
(Continued on page 20)

AVAILABLE IN FIVE SPREAD WIDTHS FROM 8 TO 12 FEET

Good Roads

BERNA CHAMPION SPREADER

Miles of aggregate spreading ahead of you? Then here's the spreader that is MILES AHEAD of anything on the market or any problem you will encounter. The Good Roads Berna Champion embodies many more modern improvements than any other aggregate spreader . . . unheard of maneuverability . . . distribution controlled by micrometer screw . . . effective engineering . . . 95 percent of load carried by box bed without pressure on spread roll; no bridging or clogging of material . . . completely enclosed and protected drive mechanism . . . sturdy 3/16-inch steel plate welded into a unisteel construction . . . adds up to the ability to put you MILES AHEAD on any spreading job. Write for descriptive literature.



*A transport caisson which permits the Berna Champion spreader to be quickly transported from one job to another is available as extra equipment. Fits all five models.*

**GOOD ROADS MACHINERY CORP.**

Kennett Square • Pennsylvania

GOOD ROADS BUILDS CHAMPIONS

Good Roads MACHINERY ESTABLISHED 1878

**"A Landing Strip Is the Soundest Investment Your Town Can Make!"**

"As mayor of an average American town, I can't stress too strongly the importance of a landing area for your community. You can't make a better investment for your town's future. For the convenience of your citizens and to enjoy increased business, more community activity, connection with main airlines and many other benefits, your town should plan a landing area right now! And it need not be expensive. Our own local landing area is very modest — just a simple, straight sod strip. This is the sensible way to start —as long as there is ample room for expansion when air traffic warrants. Get your project under way today!"

*This FREE Booklet Will Help You Plan Your Landing Strip*

**The booklet "What Your Town Needs for the Coming Air Age" illustrates many styles of landing facilities, tells you how to finance, what to do to get started and many other helpful hints. It's yours free of charge. Just write: Piper Aircraft Corporation, Dept. AC65W, Lock Haven, Penna.**

## CHECK THIS COLUMN— USE COUPON ON PAGE 17

(*Continued from page 18*)

### Water Treatment Equipment

**914.** Roberts Filter Manufacturing Co., 660 Columbia Ave., Darby, Pa., will send water works officials complete information on its line of filtration equipment. It offers a complete line of water filtration equipment, Zeolite softeners, pressure filters, and special water treatment equipment.

### Specially Designed Fire Motors

**915.** The Seagrave Corp., Columbus 7, Ohio, will send you details on its fire fighting unit. This apparatus is powered with a motor designed exclusively for efficient fire service.

### Two-Stage Portable Compressors

**916.** Gardner-Denver Co., Quincy, Ill., will send you illustrated bulletins on its "all water-cooled" two-stage portable compressors. The "all water-cooling" feature keeps temperature or altitude extremes from reducing the capacity or limiting the operation of the equipment and effects savings in oil consumption and air hose.

### Alum for Coagulation of Water and Sewage

**917.** Details on the many advantages of using alum for the coagulation of water and sewage are available from General Chemical Co., 40 Rector St., New York 6, N. Y. Water works officials find it produces a clear water and gives a better floc formation, and sewage treatment officials find that it produces a clear and pure effluent.

### Steel Pipe for Water and Sewer Lines

**918.** If you are planning the installation of water, sewer, or gas lines, you will want data from American Locomotive Co., Alco Products Division, 30 Church St., New York 8, N. Y., on its electric-welded steel pipe. This pipe is smooth, gives maximum flow and capacity, is light in weight, easy to handle, and comes in long lengths which require a minimum number of joints.

### Beamed Waterway Gate Valve

**919.** Water filtration plant operators will be interested in information on beamed waterway gate valves from The Chapman Valve Manufacturing Co., Indian Orchard, Mass. These are designed to prevent uneven wear and minimize leakage.

### Fire Extinguishing Foam

**920.** Municipal plants and shops will be interested in Mearlfoam-5 for the speedy extinction of gasoline, oil, and other serious fires. The Mearl Corp., 153 Waverly Pl., New York 14, N. Y., will send you details on this multi-protein foaming agent which works with maximum efficiency in any climate or atmosphere.

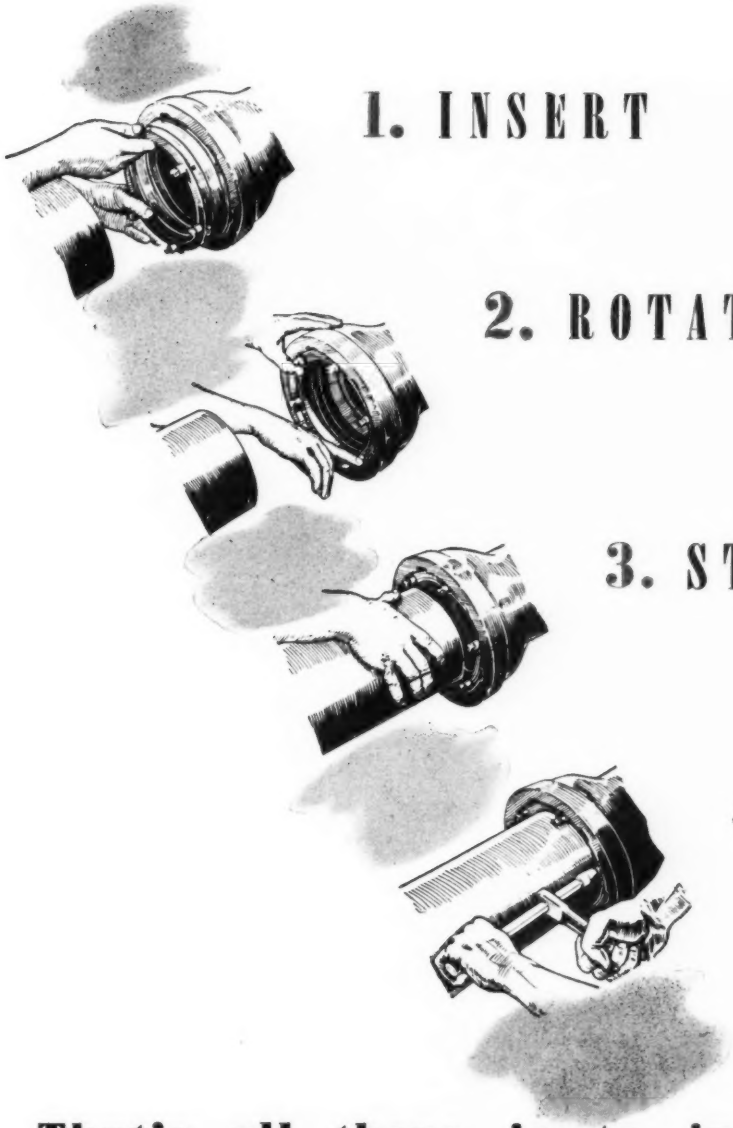
### Valves and Hydrants

**921.** Water works and sewage disposal officials can have catalogs and information from Iowa Valve Co., Hubbell Bldg., Des Moines, Iowa, giving the latest facts on its valves and "Corey type" hydrants.

### Reinforced Concrete Pressure Pipe

**922.** Lock Joint Pipe Co., Ampere, N. J., manufactures and installs reinforced concrete pressure pipe for water supply mains as well as concrete pipe of all types for sanitary sewers, storm drains, culverts, and subaqueous lines. The company is ready to answer all inquiries about its various products.

(*Continued on page 22*)




## That's all there is to installing a "BELLMASTER" JOINT

It takes as little as 2 minutes (depending on diameter) to install the new Style 85 Dresser Bellmaster Joint—in any weather—in a dry or wet ditch. Only one tool is required—a wrench—and ordinary labor can do the job.

The Dresser Bellmaster is completely factory assembled. It comes as one unit, with no loose pieces to handle or assemble.

Once installed, the Bellmaster lasts for the life of the pipe. The resilient gasket seal gives flexibility to absorb stresses of expansion, contraction, deflection and vibration, thus protecting the pipe and minimizing maintenance. Completely enclosed by the bell, it has no exposed working parts to chip or break . . . and it is protected against corrosion.

During the present emergency, cast-iron pipe makers can supply Bellmaster pipe for use with this joint only in substantial quantities such as carload lots. Write for further information.

★ ★ ★

*DRESSER MANUFACTURING DIVISION*
*Dresser Industries, Inc., Bradford, Pa.*
*In Texas: 1121 Rothwell St., Sec. 16, Houston, Texas.*
*In Canada: Dresser Manufacturing Co., Ltd., 60 Front Street, West, Toronto, Ontario.*

# DRESSER

## BELLMASTER JOINTS for Cast-Iron Pipe

BUFFALO ENGINES
ASSURANCE of PROTECTION

# THE ANSWER TO...

## "What Stand-by Power?"

**Assurance of protection is the big thing to any one who buys an engine for emergency power.**

FOR over forty years BUFFALO ENGINES have been providing this assurance as stand-by engines in water works, fire and flood control, communications service and industry. Their reliability is proven constantly in thousands of installations. In addition, they offer many other benefits which a study of their specifications will reveal to works engineers and operating managers.

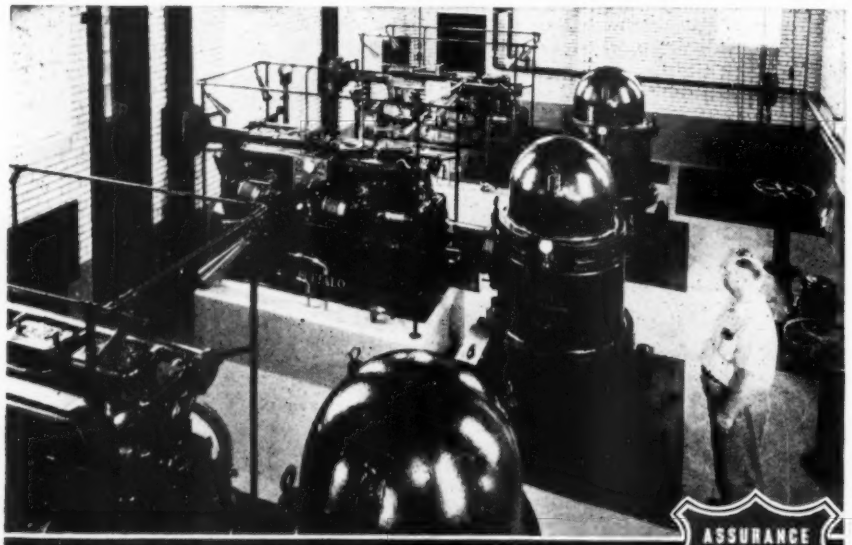
BUFFALO ENGINES deliver their full rated power and run at constant speed, quietly, cleanly and without vibration. Their design is fully developed from long experience, which results in simple maintenance, accessibility of working parts for inspection and adaptability to convenient plant layout.

Write for specification sheets for your file or information on any type of application.

**BUFFALO GASOLENE MOTOR COMPANY**

DEPT. AC-65 BUFFALO 13, N. Y., U. S. A.

*3 RAB-8 BUFFALO Engines used in Flood Control Work at the Call St. Pumping Station, Chicopee, Mass.*



BUFFALO ENGINES — 100 H. P. THROUGH 750 H. P.— IN GENERATOR AND PUMPING SETS FOR WATER WORKS — AIRPORTS — COMMUNICATIONS — FLOOD CONTROL — HOSPITALS — INSTITUTIONS — MINES — MOVABLE BRIDGES — THEATRES — SEWAGE PLANTS.

ASSURANCE of PROTECTION

CHECK THIS COLUMN—
USE COUPON ON PAGE 17

*(Continued from page 20)*

### Protect Underwater Metal from Rusting

**923.** Water works officials interested in preventing rusting below the water line in elevated steel water tanks, reservoirs, pressure tanks, and in other submerged metals will be interested in information from the Electro Rust-Proofing Corp., Dayton 10, Ohio. Form 12 is a new non-technical bulletin giving full details on this system which is installed in the tank and effectively neutralizes the electrolytic action which causes corrosion.

### Metering Steam Distribution

**924.** Today all steam must go to work since fuel is scarce. To learn how metering can effect steam savings up to 15 percent, write for Technical Bulletin No. 1667 by G. W. Kelsey and E. R. Loud of Builders-Providence, Inc., 9 Codding St., Providence 1, R. I. This bulletin explains the workings of both flow and condensation meters. Various flow meters are shown, including the direct-reading turbine type, and the differential type for remote chart recording.

### Bucket Shovel for Loading Snow, Gravel, Garbage

**925.** If you are interested in speeding the removal of loose material of any kind including snow, gravel, sand, trash and garbage, write the Western Industrial Engineering Co., 3301 Medford St., Los Angeles, 33, Calif., for information about its Jumbo truck loader. This hydraulic bucket shovel may be attached to any type or make of truck and is operated by the driver of the truck.

### Valve Controllers

**926.** Water works superintendents will be interested in information from the Benton Harbor Engineering Works, P. O. Box 612, 307 E. Main, Benton Harbor, Mich., on its electro-hydraulic valve controllers. These are available for remote control or automatic operation.

### Power Lawn Mowers

**927.** To help you maintain grounds around municipal properties you will be interested in the power lawn mowers of Eclipse Lawn Mower Co., Prophetstown, Ill., described in catalogs which are available from the company. The literature illustrates several models that would meet any special problems that might be yours, such as high speed cutting, park or cemetery work, or weed control or rough cutting.

### Dredging and Filling Equipment

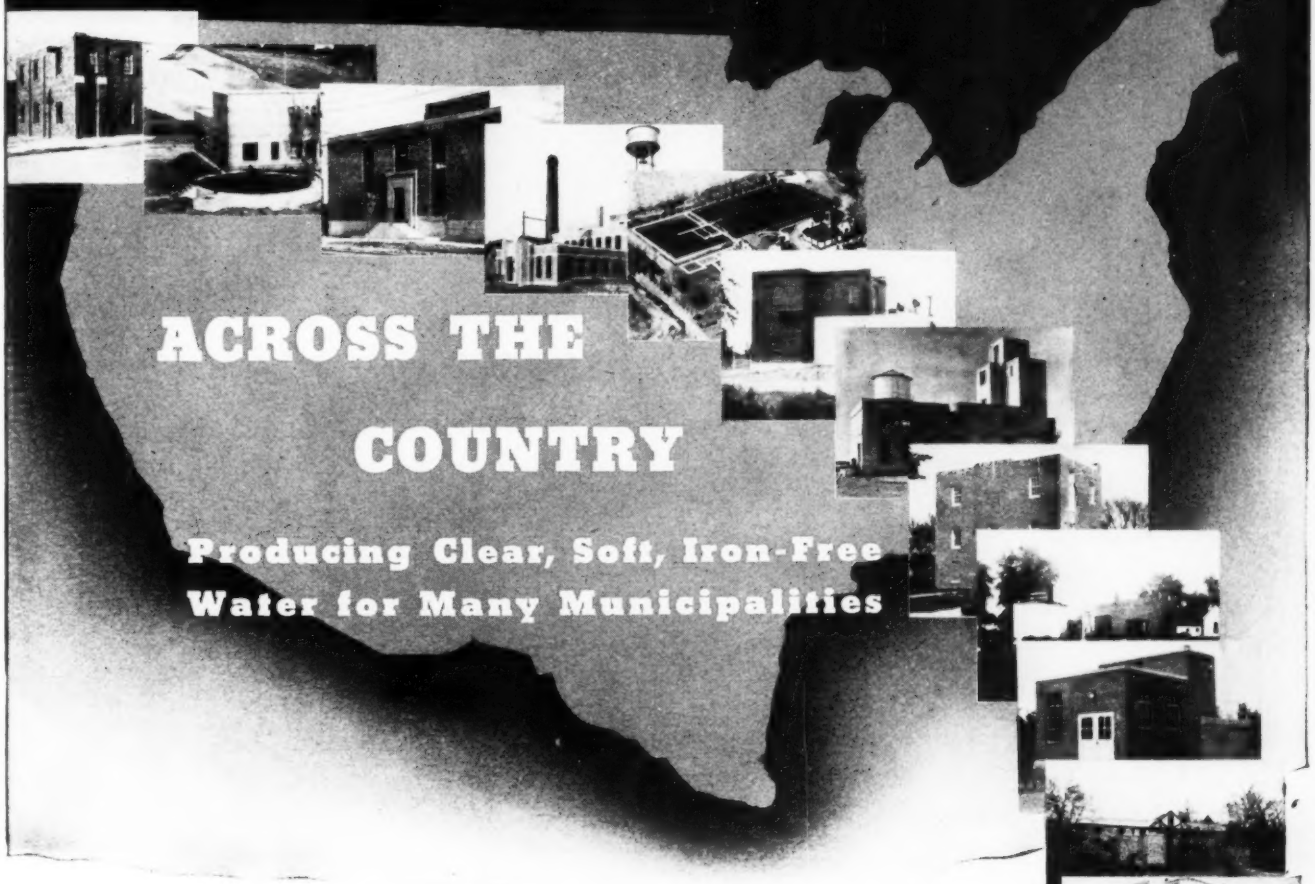
**928.** The Morris hydraulic cutter dredge which digs and transports material in a single operation is the subject of Bulletin 177 from the Morris Machine Works, Baldwinsville, N. Y. The booklet illustrates and discusses the many applications of this equipment, especially its use for cleaning reservoirs, filling low lands, draining low areas, beautification of parks and other municipal projects.

### Mechanical Water Conditioner

**929.** The Flocculator is a mechanical water conditioner which causes individual particles in the water to impinge on one another, producing heavy dense flocs that settle rapidly. The Dorr Co., 570 Lexington Ave., New York 22, N. Y., will send you a bulletin discussing flocculation and the Dorr Flocculator which can be fitted into existing plants. With this device filter runs can be lengthened, and wash water demands and chemical costs may be decreased.

*(Continued on page 24)*

# THERE'S A STRING OF THEM NOW




When it's reconversion time, there will be new materials, methods and ideas to be developed and perfected and molded into useful equipment . . . equipment which eventually will find application in important beneficial Public Works improvements.

In the water conditioning field, however, there is no need to wait for this "miracle" equipment to materialize because

ACCELATORS had already gone through the developing and trying-out stage before the war. There's a string of municipal Accelator installations across the country now.

ACCELATORS are doing a lot of different things for a lot of different kinds of water... clarifying... softening... stabilizing . . . removing color . . . taking out iron.

Results are always excellent . . . frequently remarkable.

You can't beat ACCELATORS for Performance and Economy. Would you like Bulletin 1824?

INFILCO

INFILCO
INCORPORATED
325 W. 25th PLACE, CHICAGO 16, ILL.

Better Lawns with Still Less Manpower!

Of course you want to keep your lawns as sightly as wartime conditions permit. Yet the manpower situation is a high hurdle, especially when it comes to preparing compost. Yet, in many cities, large and small, you will find healthy park lawns, despite the scarcity of labor. In most cases these municipalities maintain their lawns with compost prepared by the Royer Compost Shredder and Mixer. Send for Bulletin 440.

Check these Royer features:

- Handles all materials — leaf mold, sod, manure, sewage sludge.
- Removes sticks, stones, trash.
- Aerates as it shreds and mixes.
- Discharges into trucks or on pile.
- Easily moved from park to park.
- Reduces compost to pea-size particles—no lumps.
- Twelve stationary and portable models—electric, gasoline engine and belt-to-tractor driven.

THE ROYER FOUNDRY & MACHINE CO.
179 PRINGLE ST., KINGSTON, PA.
PIONEER BUILDERS OF COMPOST SHREDDERS



CHECK THIS COLUMN—
USE COUPON ON PAGE 17

(*Continued from page 22*)

## Simplify Sewer Cleaning Operations

**930.** Here is the way you can save time, money, and labor in sewer cleaning operations in your community. Flexible Sewer Rod Equipment Co., 9059 Venice Blvd., Los Angeles 34, Calif., will send you an illustrated catalog showing its complete line of equipment for this method of sewer cleaning which eliminates the time-consuming, hot, and unsanitary methods formerly used.

## Flocculation Control

**931.** Here is a piece of equipment that will insure efficient clarification of water, liquid wastes, and sewage. Bulletin 746 from The Jeffrey Manufacturing Co., Columbus, Ohio, discusses the Floctrol which mechanically conditions the liquid to attain the desired clarification at a saving in chemical costs.

## High Pressure Tree Sprayers

**932.** Do you have large or small trees that need to be sprayed regularly? Literature is available from the Friend Manufacturing Co., Gasport, N. Y., discussing the performance of its park sprayers and the spray pump built for high pressure spraying with which it is equipped.

## Zone Marking Machines

**933.** Zone marking machines for street and airport work are the subject of a folder from the Kelly-Creswell Co., Xenia, Ohio. Outstanding features of this highway centerlining and safety lane equipment are the striping guns, which produce clean-cut, uniform lines; and a pressure cleaner mechanism which forces atomized cleaner fluid through the line and gun, reducing the time necessary to clean the machine.

## Cast Iron Pipe

**934.** Universal cast iron pipe for water mains and sewer lines is the subject of the Universal Catalog being offered by The Central Foundry Co., Dept. C, 386 Fourth Ave., New York 16, N. Y. The company points to the following advantages: no calking or pouring of lead, no bell holes to dig, no deterioration, and a high flexibility.

## Steel Forms for Concrete Work

**935.** City engineers as well as municipal and consulting engineers will be interested in Bulletin No. 2035 just off the press and being offered by Blaw-Knox Division, Blaw-Knox Co., Farmers Bank Co., Pittsburgh 22, Pa. This discusses Blaw-Knox steel forms for concrete construction for tunnels, sewers, conduits, dams, and reservoirs and includes several on-the-job pictures of the various designs used on different types of work.

## Branch Connections Under Pressure

**936.** If you are planning to make new extensions to your existing pipelines, Smith tapping machines will do the job without interrupting the continuous flow of vital water to other points on the same line. The A. P. Smith Mfg. Co., East Orange, N. J. will send you catalog material on these machines, which make taps from 2 inches to 42 inches.

## Quick Action Fire Apparatus

**937.** Planning to purchase fire apparatus? Descriptive literature is offered by Ward LaFrance Truck Division, Great American Industries, Inc., Elmira, N. Y. This points out that Ward LaFrance trucks, because of their manoeuverability and dependability and their powerful 6 cylinder engines which assure speed and reserve power, will help communities reduce serious fire losses.

## *You get an unbiased recommendation from Fairbanks-Morse...*

### ...Because Fairbanks-Morse supplies all the major types of vertical turbine pumps!

**It usually takes a trained pump engineer** to know which type of vertical turbine pump to use under various operating conditions. Yet, because some companies make only one type—others another—it is often up to the buyer to puzzle out which type of pump he should use... then wonder whether he made the right choice.

But Fairbanks-Morse offers this vital advantage to assure your getting maximum returns from your investments...

*The combination of the Fairbanks-Morse and Pomona Pump organizations places at your service the most highly skilled group of engineers in the pump industry—supplying* ALL *the major types of vertical turbine pumps.*

This means that Fairbanks-Morse and Pomona engineers, from their vast background of pumping experience, are able to recommend the exact type of pump best suited to *your particular* job, whether it calls for water lubrication or oil... open impellers or closed. Result—when you bring your vertical pump problems to Fairbanks-Morse, you are certain of getting maximum performance for your pump dollar!

**LET OUR TRAINED ENGINEERS HELP YOU!**

They will gladly study your vertical pump problems and give unbiased advice on your most efficient and economical solution. A letter, wire or phone call places this unusually complete engineering experience at your service. Fairbanks, Morse & Co., Chicago 5, Illinois.

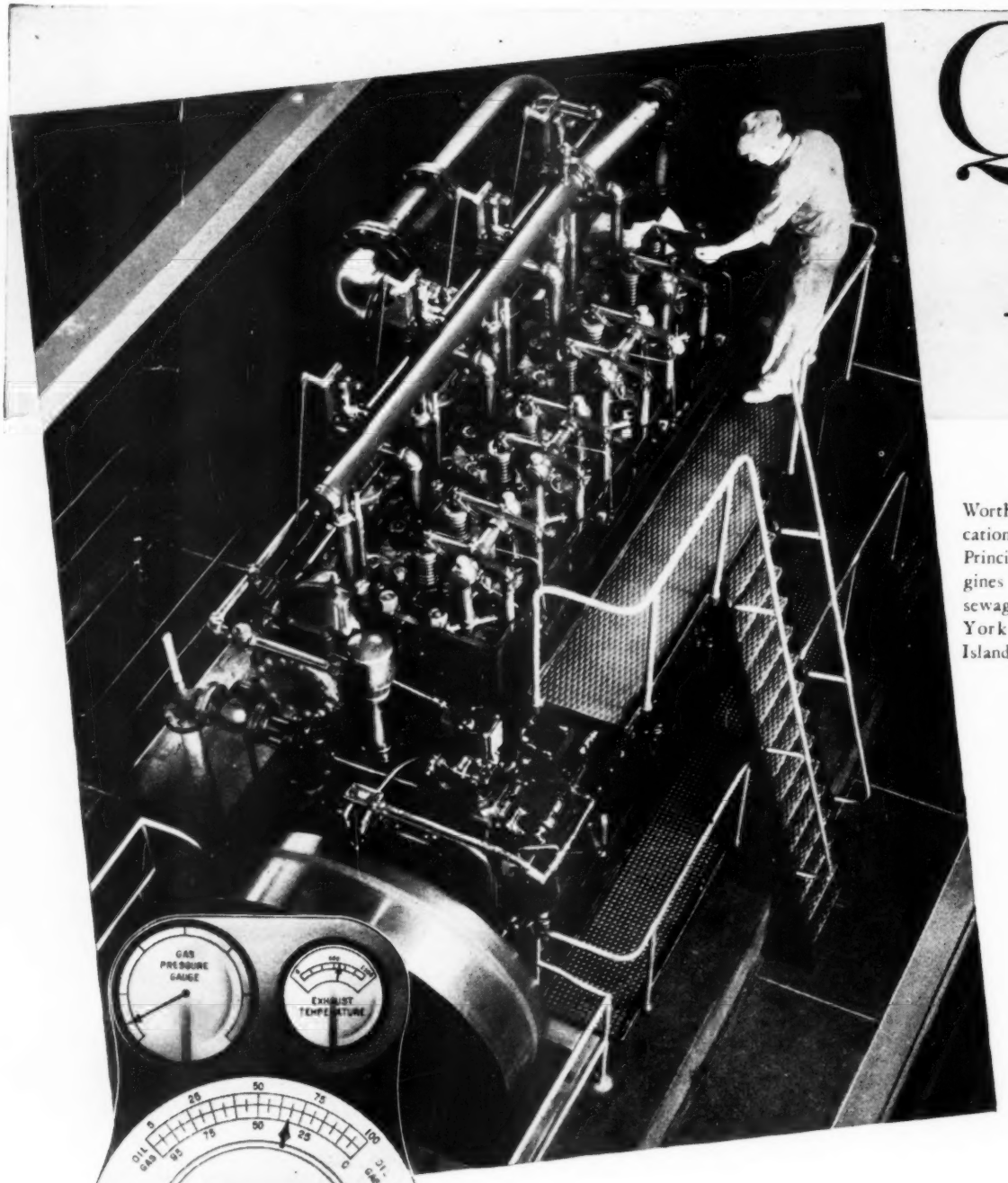
**Write for Bulletin J-65**

# Fairbanks-Morse

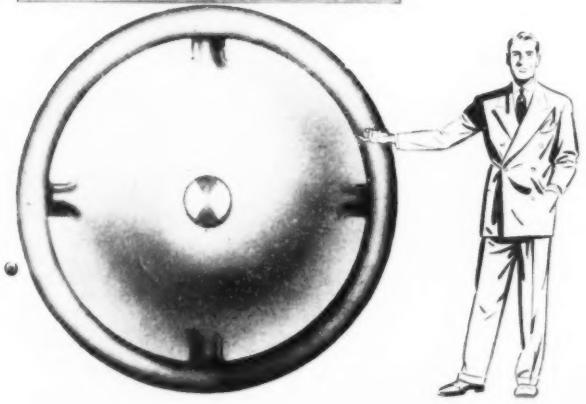
*A name worth remembering*

**Diesel Locomotives • Diesel Engines • Generators • Motors • Pumps • Scales**
**Magnetos • Stokers • Railroad Motor Cars and Standpipes • Farm Equipment**

# Q. . . . A. .




Worthington's first application of its Dual-Fuel Principle to one of its engines now operating on sewage sludge gas at New York City's Tallman's Island plant.



## IT'S THE WORTHINGTON *New* DUAL-FUEL ENGINE

Out of a half century experience in building Diesel and gas engines, Worthington offers an engine which efficiently uses either or both oil and gas fuels.

The Dual-Fuel engine uses *either* oil or gas fuels . . . instantly, at the turn of a wheel . . . or automatically under the control of the governor.

And it operates on *both* oil and gas fuels . . . in any proportions and under full automatic or manual control, depending on the job requirements.

With pilot oil ignition, gas fuel is burned with

# . . WHAT IS IT? DIESEL OR GAS ENGINE?

# . . IT'S EITHER OR BOTH...*at the turn of a wheel!*

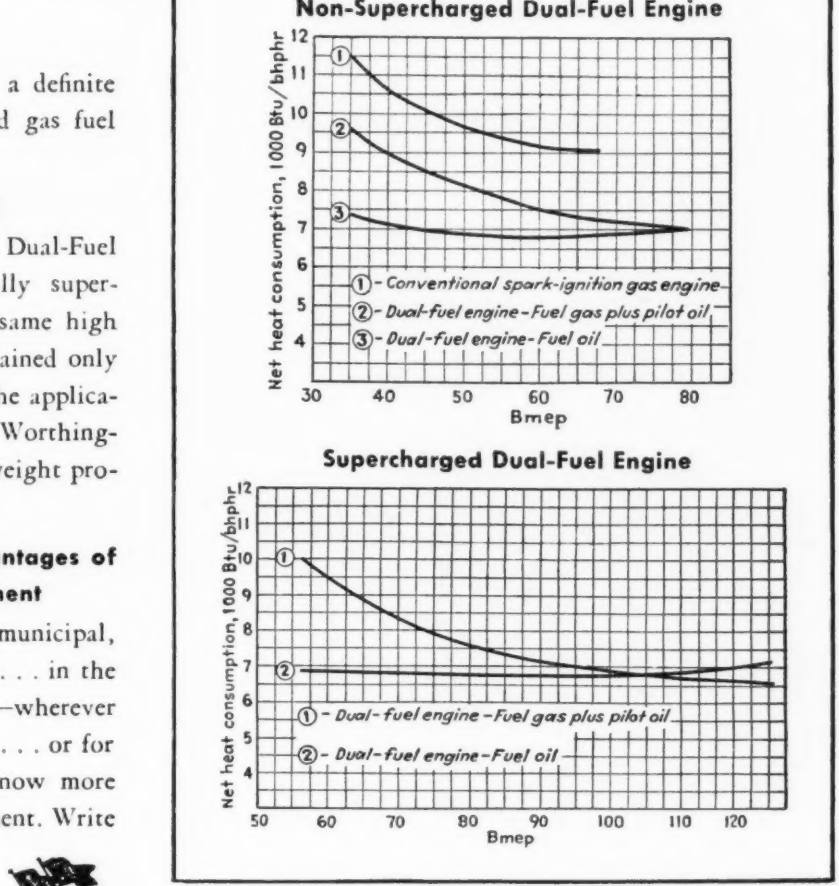
greatly improved economies . . . a definite dollar saving wherever an assured gas fuel supply is available.

**. . . and now supercharged**

Another step forward . . . the Dual-Fuel engine has now been successfully supercharged by Worthington to the same high thermal efficiencies previously obtained only in supercharged oil Diesels. By the application of the exhaust turbo-charger, Worthington engines of the same size and weight produce up to 50% more power.

**You'll want to consider the advantages of this Worthington development**

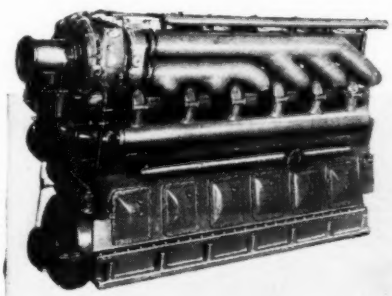
Whether the application is for municipal, industrial or public utility plants . . . in the oil fields, refineries or on pipe lines—wherever gas fuel is economically available . . . or for sewage plants, you'll want to know more about this revolutionary development. Write for complete details that prove *there's more worth in Worthington. Worthington Pump and Machinery Corporation, Engine Division, P.O. Box 953, Buffalo, N. Y.*


Non-Supercharged Dual-Fuel Engine
Net heat consumption, 1000 Btu/bhphr
Bmep
① - Conventional spark-ignition gas engine
② - Dual-fuel engine - Fuel gas plus pilot oil
③ - Dual-fuel engine - Fuel oil
Supercharged Dual-Fuel Engine
Net heat consumption, 1000 Btu/bhphr
Bmep
① - Dual-fuel engine - Fuel gas plus pilot oil
② - Dual-fuel engine - Fuel oil

**WORTHINGTON**

YOUR PARTNER IN POWER PROGRESS

ES-3

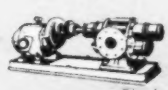


**WORTHINGTON-BUILT ENGINES AND AUXILIARIES**

Diesel engines . . . 150 to 3290 hp. Gas engines . . . 175 to 3500 hp. Dual-Fuel engines . . . 150 to 3290 hp.

Starting Air Compressors

Oil Transfer Pumps



Cooling Water Circulating Pumps

Evaporative Type Engine Water Coolers

# *Its Economy begins above ground...*

## ...and endures through the years in service!

STARTING from the time you load its 13-foot lengths onto your trucks . . . continuing during its rapid assembly in the trench . . . and lasting throughout its long, dependable service underground, Transite Sewer Pipe makes important contributions to more efficient, economical sewage disposal.

Check these money-saving advantages:

**FAST INSTALLATION.** Transite's light weight means easier handling; its long 13-foot lengths reduce the number of joints in the line, speed up assembly.

**LESS INFILTRATION.** Its floating sleeve-type joint combines flexibility with tightness . . . guarding against costly infiltration and cutting down on the load at the disposal plant.

**HIGH DELIVERY CAPACITY.** The smooth interior surface of this asbestos-cement pipe assures high delivery capacity . . . frequently permits smaller pipe, or flatter grades with correspondingly shallower trenches.

**CORROSION-RESISTANT**—outside, inside and all the way through! Transite's high corrosion resistance has been proved in countless installations, under a wide range of soil conditions.

If you are planning sewage works projects for the days ahead, you will want all the facts about Transite Sewer Pipe. Brochure TR-21A is free on request. Address Johns-Manville, 22 East 40th St., New York 16, N. Y.

JOHNS-MANVILLE JM PRODUCTS

## Johns-Manville TRANSITE *SEWER* PIPE

FOR EFFICIENT, ECONOMICAL SEWAGE DISPOSAL

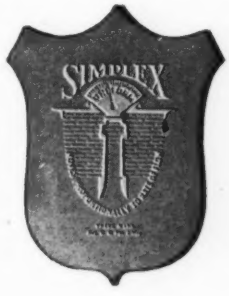
# When the Bell Rings . . .

This advertisement appeared in June, 1943. Since that time many have started their post-war planning with Simplex. If you haven't yet begun, we feel the context of this advertisement is as timely as it was two years ago . . . but the need is more urgent. BLUE PRINT NOW . . . and act.

Plant superintendents, council members, city commissioners, and other officials, all are talking about war and its many urgent problems . . . and just as earnestly these same men are thinking of the urgent problems they will face after the war.

We sincerely believe that much of your post-war planning can and should be started now, when you and your consulting engineers have the opportunity to analyze your over-all program and prepare a plan of action which is commensurate with your future needs. Then, when the bell rings and you've torn up the last set of priority papers, you will be ready—engineered for immediate progress.

Simplex Valve & Meter Company has been collaborating in such long-time planning for over forty years. Our outlook, therefore, is broad and is based on sound experience. We know many of the problems involved and can offer the solution to most of them. We are prepared to help you plan for the future — starting today.




**SIMPLEX VALVE & METER COMPANY**

6789 UPLAND STREET, PHILADELPHIA 42, PA.

# THESE METER FEATURES WON THE BIGGEST CONTRACTS!

## *3 Reasons Why* WORTHINGTON-GAMON *Meters Were Specified*

The largest water meter contracts ever awarded in the United States named "Watch Dog" meters.

This choice is due to these facts:

1. Worthington-Gamon has the longest experience of any water meter manufacturer—a fact which suggests superior performance over the longest life.
2. Manufacturing controls established not just for meters, but for a broad line of Worthington equipment used by municipalities, provide greater assurance of low-cost maintenance.
3. Constantly-improved Worthington-Gamon meter designs have developed an unusual ability to measure accurately even the smallest quantities of water.

No other water meter manufacturer maintains as extensive service facilities as Worthington-Gamon—24 district offices in 24 leading cities. Worthington water meter technicians and Worthington Research Laboratories will help you work out a plan for better, lower-cost metering.

*Subsidiary of*

**WORTHINGTON PUMP AND MACHINERY CORPORATION**

Power Plant Equipment • Turbines & Turbo-Generator Sets • Condensers, Heaters, Ejectors • Water Purification Equipment • Pumps, Stationary and Portable Compressors • Air Conditioning & Refrigerating Equipment • Power Transmission Equipment • Construction Machinery, Equipment for Mines • Locomotive Feedwater Heaters • Welding Positioning Equipment • Liquid Meters

**WORTHINGTON-GAMON METER COMPANY**

282-296 South Street, Newark, New Jersey

WG 4-5

**The Meter Specified in the Largest Contracts Ever Awarded in the U. S.**

"Watchdog" models . . . made in standard capacities from 20 G P M up; frostproof or split case in household sizes. All parts interchangeable with your present meters of our manufacture. Write for Bulletin.

# San Antonio.. "DEEP IN THE HEART OF TEXAS"

is another City that finds the DROTT Bullclam Shovel Method of Sanitary Fill Pays

THE ALAMO, ERECTED IN 1718 BY THE FRANCISCAN MONKS

## A Study in Contrast

San Antonio's Old City Dump . . . a breeding place for mosquitoes, maggots, flies, rats and other menaces to health . . . also a great fire hazard.

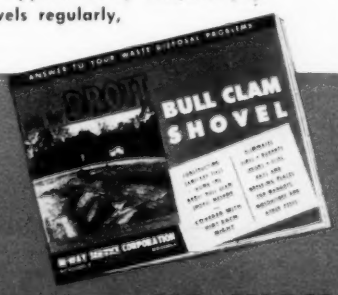
The New, Clean Sanitary Fill Constructed With Drott Bullclam Shovels. All refuse is thoroughly compacted and covered. Later this area can serve as a park, playground, etc.

## Building the Fill

Digging the trench! After a couple of clean-up passes, this trench is ready for refuse. San Antonio, approximately 300,000 population, uses three Drott Bullclam Shovels regularly, another as a standby unit.

Refuse is dumped and compacted. Bullclam on right is excavating new trench; center, compacting; left, cleaning up. San Antonio adopted idea of Sanitary Fill from five major Army camps that surround the city; each has a Sanitary Fill constructed with Drott Bullclam Shovels.

Get The Complete Story! Send For This Book—"Answer To Your Waste Disposal Problems . . . with the Drott Bullclam Shovel" FREE

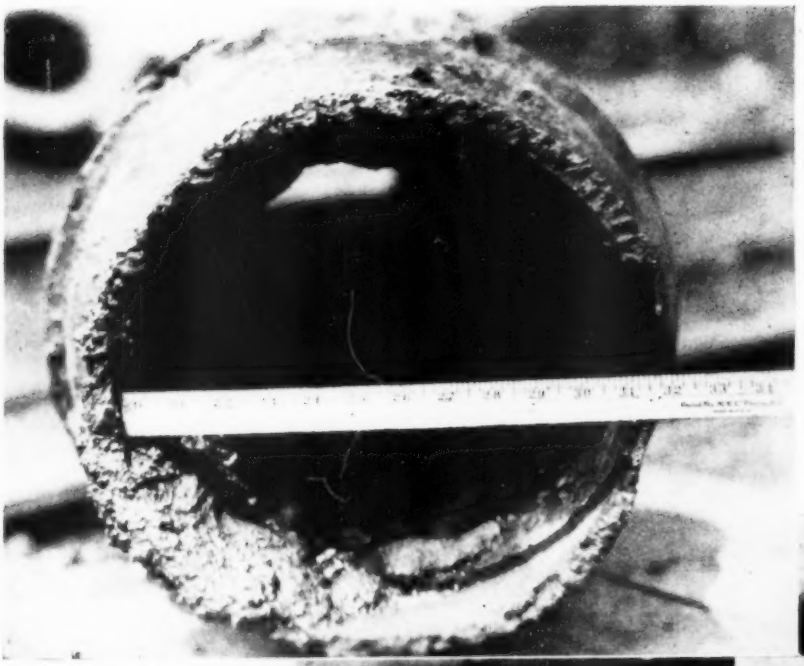



- DROTT BULLCLAM SHOVEL FITS ALL MAKES AND CURRENT MODELS OF CRAWLER-TYPE TRACTORS, from 30 to 130 h. p. Four sizes, 1, 2, 3 and 4 yd. capacities.
- Operated by DROTT POSITIVE, CLOSED HYDRAULIC SYSTEM. SMOOTH • QUICK • DEPENDABLE. Keeps dirt and air out . . . keeps oil in! Used successfully on Drott equipment for many years.

DROTT UNIVERSAL EQUIPMENT

HI-WAY SERVICE CORPORATION

3841 W. WISCONSIN AVE. • MILWAUKEE 8, WIS.



**Above:** Section from 12" line showing heavy scale.

# The NATIONAL METHOD

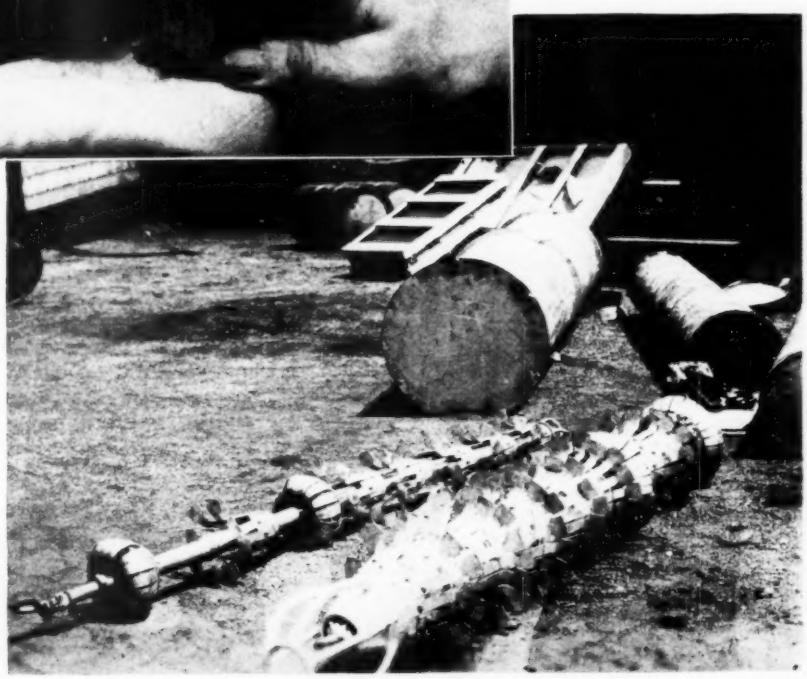
## *of Water Main Cleaning Gets* RESULTS!

**At left:** Large chunk of scale dislodged from 12" line by the cleaner.

These three photos were taken on a NATIONAL water main cleaning job.



**Below:** 8" & 12" National Water Main Cleaners.



***Results attained:***

**DIAMETERS:**

| | Before Cleaning | After Cleaning |
|---|---|---|
| 12" | 9.38" | 12" |
| 16" | 13.22" | 16" |

**CARRYING CAPACITIES:**

| | |
|---|---|
| 12" | increase of 103% |
| 16" | increase of 70.6% |

**DECREASE IN PRESSURE AT THE PUMPS:**

| | |
|---|---|
| 12" | decrease of 76% |
| 16" | decrease of 64% |

## THE NATIONAL WATER MAIN CLEANING CO.

**30 Church Street** — *Contractors for Cleaning of Water Mains Since 1907* — **New York 7, N. Y.**

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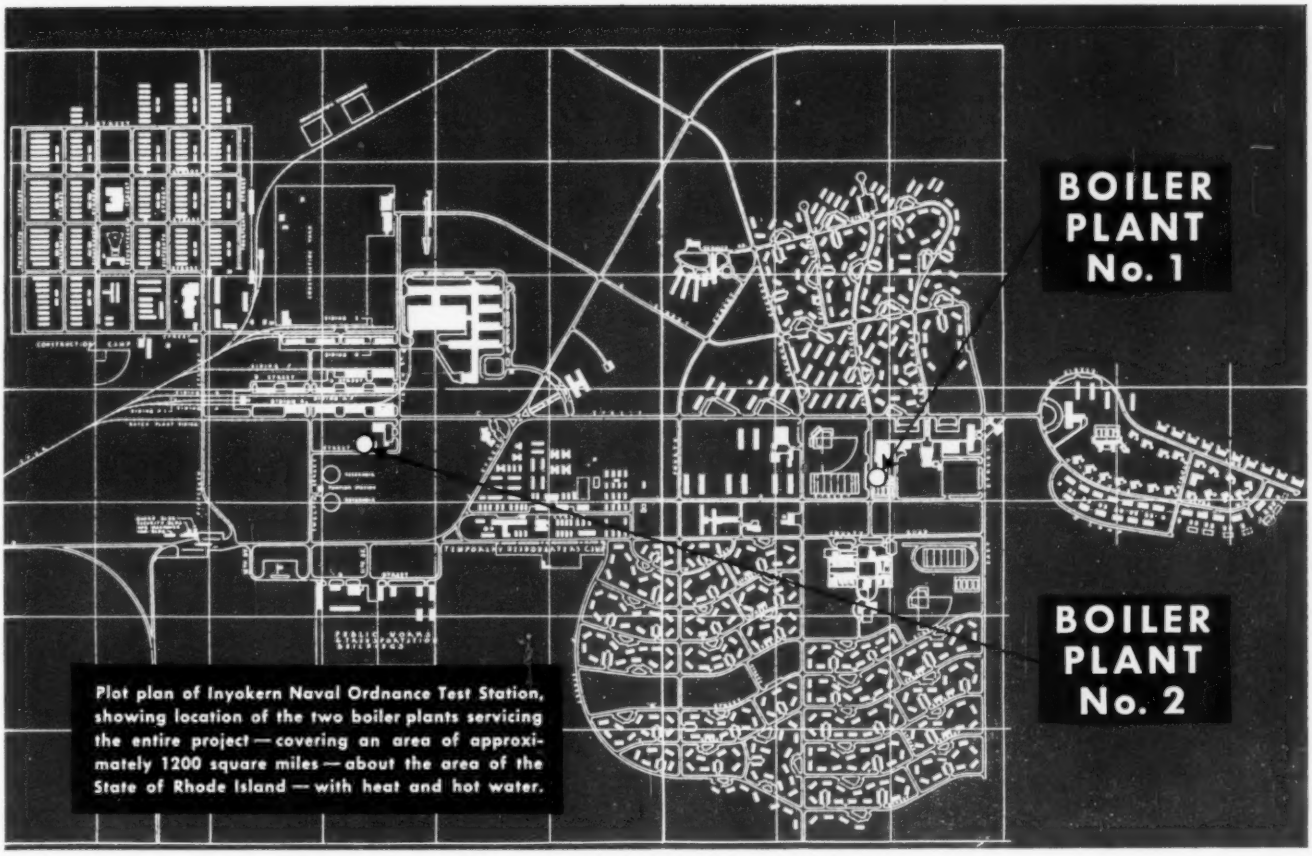


Plot plan of Inyokern Naval Ordnance Test Station, showing location of the two boiler plants servicing the entire project — covering an area of approximately 1200 square miles — about the area of the State of Rhode Island — with heat and hot water.

# OVER *125,000* FEET OF RIC-WIL CONDUIT SYSTEM AT THE $55,000,000 INYOKERN NAVAL ORDNANCE TEST STATION

Heat and hot water supply for the mammoth Inyokern Naval Ordnance Test Station near Inyokern, California are provided centrally from two boiler plants, through underground distribution piping, all insulated and protected by more than 125,000 feet of Ric-wiL Conduit. The system includes 437 Ric-wiL prefabricated expansion loops. The 9500 people employed in the area are housed in several hundred buildings comprising homes, dormitories, barracks, mess halls, post-office, theatre, school and hospital—all heated and supplied with hot water from the two central sources. By using Ric-wiL products, installation time and cost were held to a minimum, and a permanent, trouble free distribution system is assured.

## For Your Postwar Construction, Consider These Advantages of Central Heating . . .

- Savings of 15% or better in overall fuel consumption.
- Elimination of separate boiler tending for each building unit.
- Elimination of smoke and soot which destroy original beauty of buildings.
- Increase of available space in building basements.
- Elimination of coal delivery and ash removal from buildings.
- Uniform, clean heat provided quickly, whenever needed.
- Central unfailing source of hot water.

Engineers and architects with present or post-war projects on their boards, will find the new Ric-wiL Catalog No. 44 a valuable source of information on efficient Central Heat Distribution for institutions, industrial or commercial building groups, housing projects and municipalities.

Official U. S. Navy Photo

*Distribution Piping being installed in Ric-wiL Tile Conduit at Inyokern.*

**RIC-WIL** INSULATED PIPE CONDUIT SYSTEMS
THE RIC-WIL COMPANY · CLEVELAND, OHIO
AGENTS IN PRINCIPAL CITIES

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Ever since the war began, Michaels Bridge Trestles have helped provide the means of transporting men and machines over the streams of Europe and Asia. And until the need no longer exists, the facilities of this organization will continue to be engaged in the manufacture of some of the materials of which bridgeheads are made. ¶ When peace is restored and civilian production resumed, Michaels Time-Tight Exhibit Cases, MI-CO Parking Meters, Bronze Plaques, and other peacetime requirements will be available. In the meantime we'll be glad to send you complete information on any or all of these products.

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CARVING airstrips out of jungles and dozens of equally difficult assignments have proved how expert the Seabees are in getting the most out of a bulldozer. Here, on an "easy" job, one of them builds a causeway to enable the crew of an LST to unload supplies.

On a Pacific island or here at home, getting the most out of bulldozers—and other types of construction equipment—depends not only on the operator's skill but also on effective lubrication. Maintenance-wise contractors everywhere know effective lubrication is always assured when they use Texaco.

*Texaco Ursa Oil X*★★ for Diesels and heavy-duty gasoline engines, for example, assures better compression and combustion, greater fuel economy and more power because special additives give this heavy-duty oil the valuable properties of detergency and dispersion. Its detergency keeps piston rings free and engine parts clean. Its dispersive ability holds deposit-forming materials in suspension until drained. *Ursa Oil X*★★ resists oxidation, protects alloy bearings and prevents scuffing of rings, pistons, cylinders.

For quieter-running, longer-lasting transmission and differential gears, use Texaco transmission and differential lubricants.

Texaco lubricants have proved so effective in service they are definitely preferred in many fields, a few of which are listed at the right.

Texaco Lubrication Engineering Service is available through more than 2300 Texaco distributing plants in the 48 States. Get in touch with the nearest one, or write:

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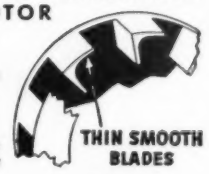


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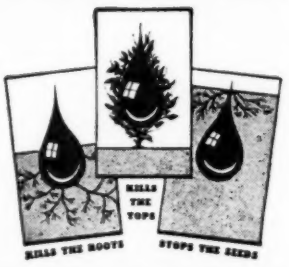


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Leadite is shipped in powder form, packed in sacks of 100 lbs. net each. Leadite tested and used for over 40 years • Leadite joints improve with age.

***Be sure it is Leadite and accept no imitations***

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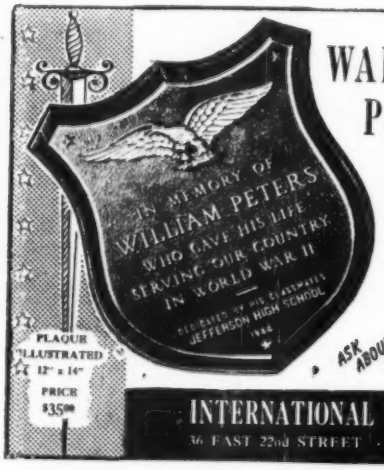


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Spreads forward or backward, in even layers, wet or dry materials, thick or thin, as desired. Spreads full or half width of street. Efficiently handles all granular materials up to 1", including sand, cinders, salt, pea gravel, chips, buckshot. For road building, maintenance and ice control. Send for literature.

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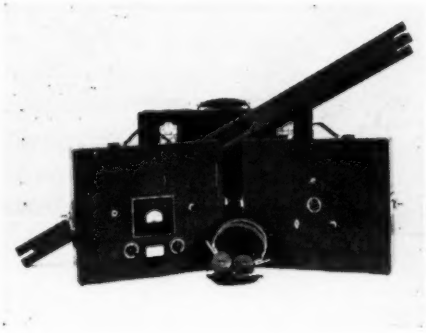
**Buried Pipe and Cable Finder**

# M-SCOPE

**Water Leak Detector**



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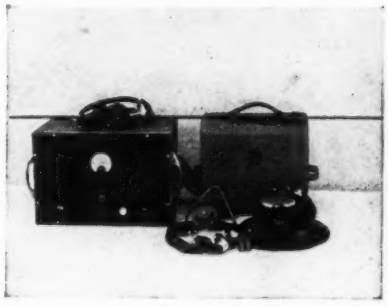
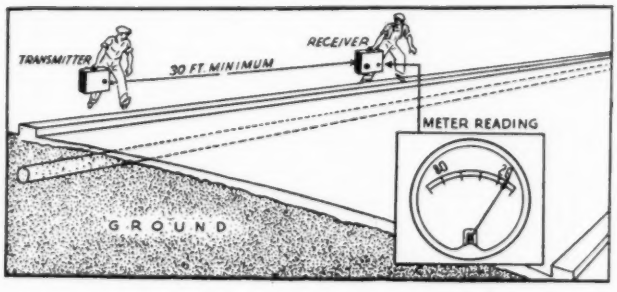


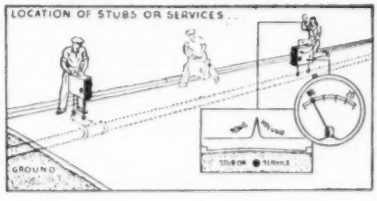
The M-SCOPE consists of a specially designed radio Transmitter and Receiver, with conductive wire. In operation, the Transmitter sends out a continuous signal, and when there is no metal between Transmitter and Receiver, a definite volume of sound is heard in the Receiver earphones and the meter (mounted on Receiver) gives a definite reading. If a metal object lies between the two units, sound in earphones is louder and meter reading higher—and the pipe or other metal object is located.

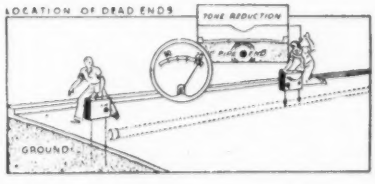
An M-SCOPE Water Leak Detector is so "sensitive" that it can spot the exact trouble point even through concrete; so "speedy" that it can test from 275 to 300 hydrants in a single day; so "accurate" that it usually hits the trouble spot "right on the nose" and "always" within a circle two to three feet in diameter.

City Water Superintendents and Army Engineers alike, these days realize the importance of conserving "water, pipe, fuel." The M-SCOPE Water Leak Detector helps you conserve all three.




- It locates the exact position of the object
- It traces the exact course of an underground line
- It determines the difference between a buried pipe and a single metal object
- It works positively and instantaneously
- It prevents accidental damage by diggers
- It eliminates exploratory excavations
- It saves time, labor, money




Use the Fisher M-Scope Water Leak Detector to determine the exact location of a leak. Its use will enable you to

- Locate exact position of pipe line leak
- Determine where to break pavement when leak appears on the surface
- Solve the problem of "unaccounted for" water or oil
- Reduce operating expenses.
- Increase net revenue
- Every leak is an unmetered user

***The M-SCOPE is solving—successfully—the varied problems involved in the development, operation and maintenance of buried pipe and cable systems and is in daily use by representative organizations in such important groups as:***

- Government Projects
- Municipalities
- Sewerage and Water Plants
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**USE SOLVAY CALCIUM CHLORIDE**

You can substantially reduce maintenance operations — save valuable manpower — by using the Solvay Calcium Chloride Method of dustproofing and surface-binding.

Solvay Calcium Chloride is economically and easily applied on large or small areas—is clean, odorless —does not stain or track. Does not require special equipment and can be used on gravel, clay, cinders, stone and similar surfaces.

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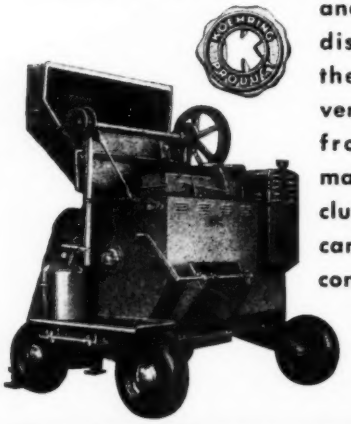

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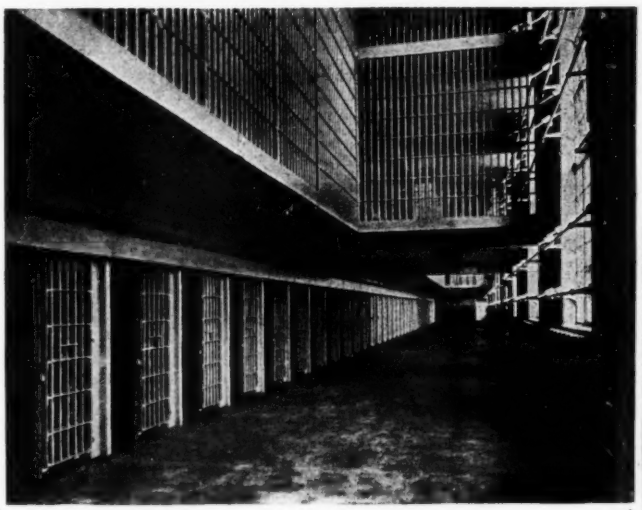

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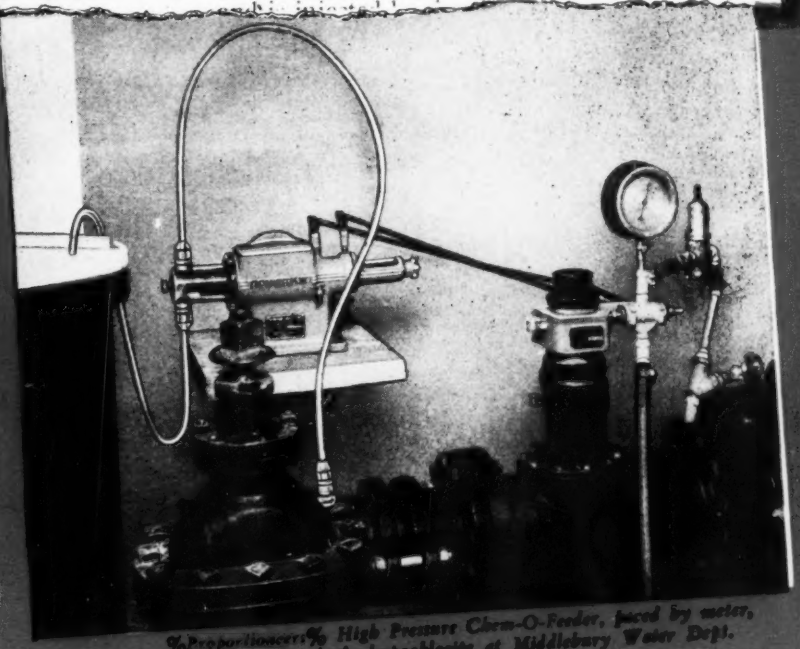
How to automatically treat the town water supply was a serious problem in Middlebury, Vt. But the Middlebury Water Commissioners made a wise choice . . . they called in the Johnson-Barker-Webb Co. of Nashua, N. H., representing %Proportioneers% in Vermont and N. H. Automatic flow proportional feeding equipment by %Proportioneers% was soon installed, giving complete satisfaction and 100% protection to the town water supply. A small frost-proof cellar houses the entire chemical feeding equipment, together with the main valves and meter. Chemical solution is drawn from the reagent tank through non-corrosive plastic tubing



*%Proportioneers% High Pressure Chem-O-Feeder, paced by meter, automatically feeds hypochlorite at Middlebury Water Dept.*

End your water treating problem with %Proportioneers% Chemical Feeders and Hypochlorinators . . . treat your water supplies automatically! The High Pressure Chem-O-Feeder, shown above, starts, varies and stops dosage of chemical as the water comes on, fluctuates and tapers off. The meter control prevents dangerous undertreatment or unpleasant taste resulting from wasteful overtreatment. Hydraulic operation of Chem-O-Feeder insures unfailing operation, without the use of electricity or other power source.

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## % PROPORTIONEERS. INC. %

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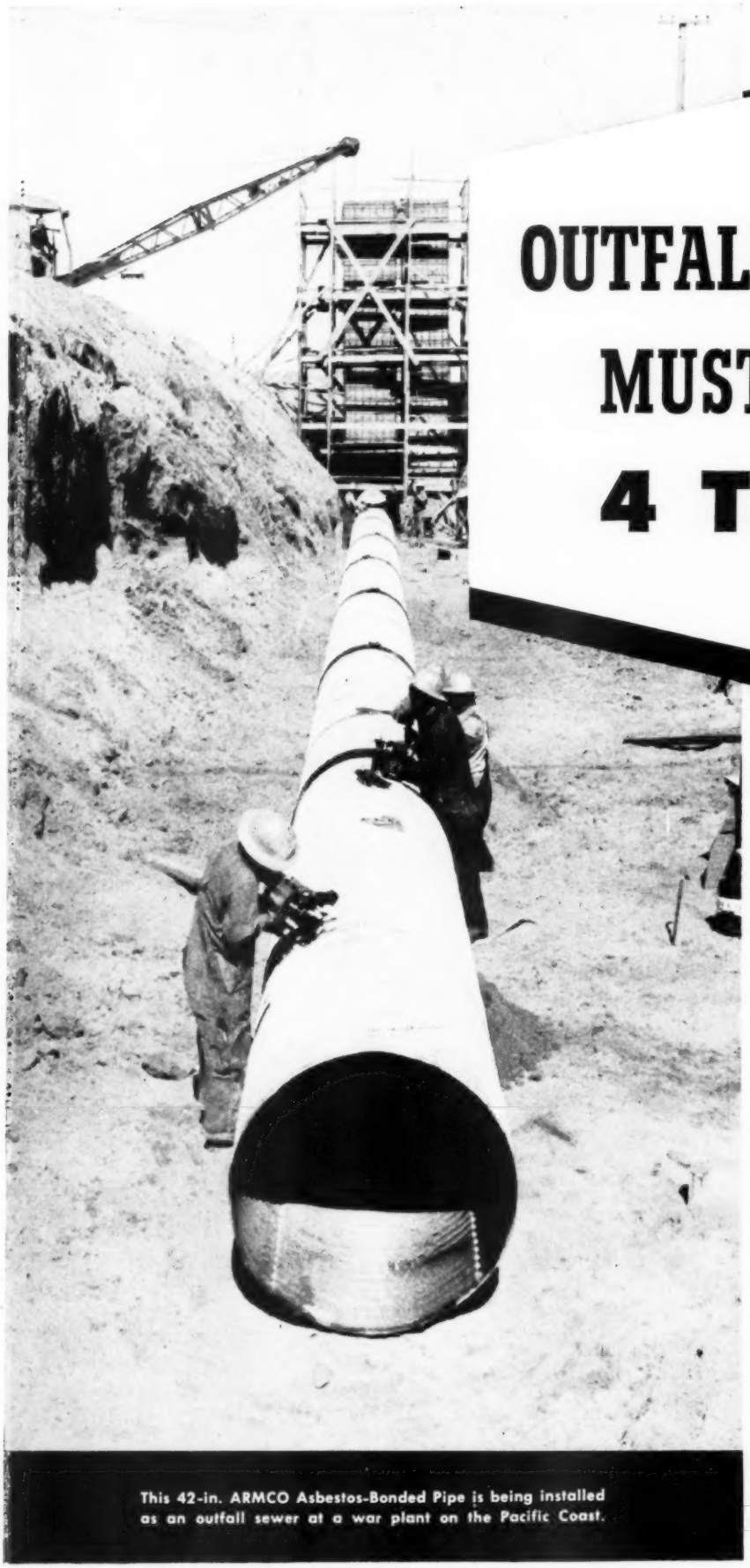

This 42-in. ARMCO Asbestos-Bonded Pipe is being installed as an outfall sewer at a war plant on the Pacific Coast.

That outfall sewer your plant or your community will need after the war should be designed against (1) disjointing and infiltration, (2) continual maintenance and early replacement, (3) severe service conditions, and (4) obsolescence.

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Write for the ARMCO Sewer Book. Address Armco Drainage Products Association, 405 Curtis Street, Middletown, Ohio.

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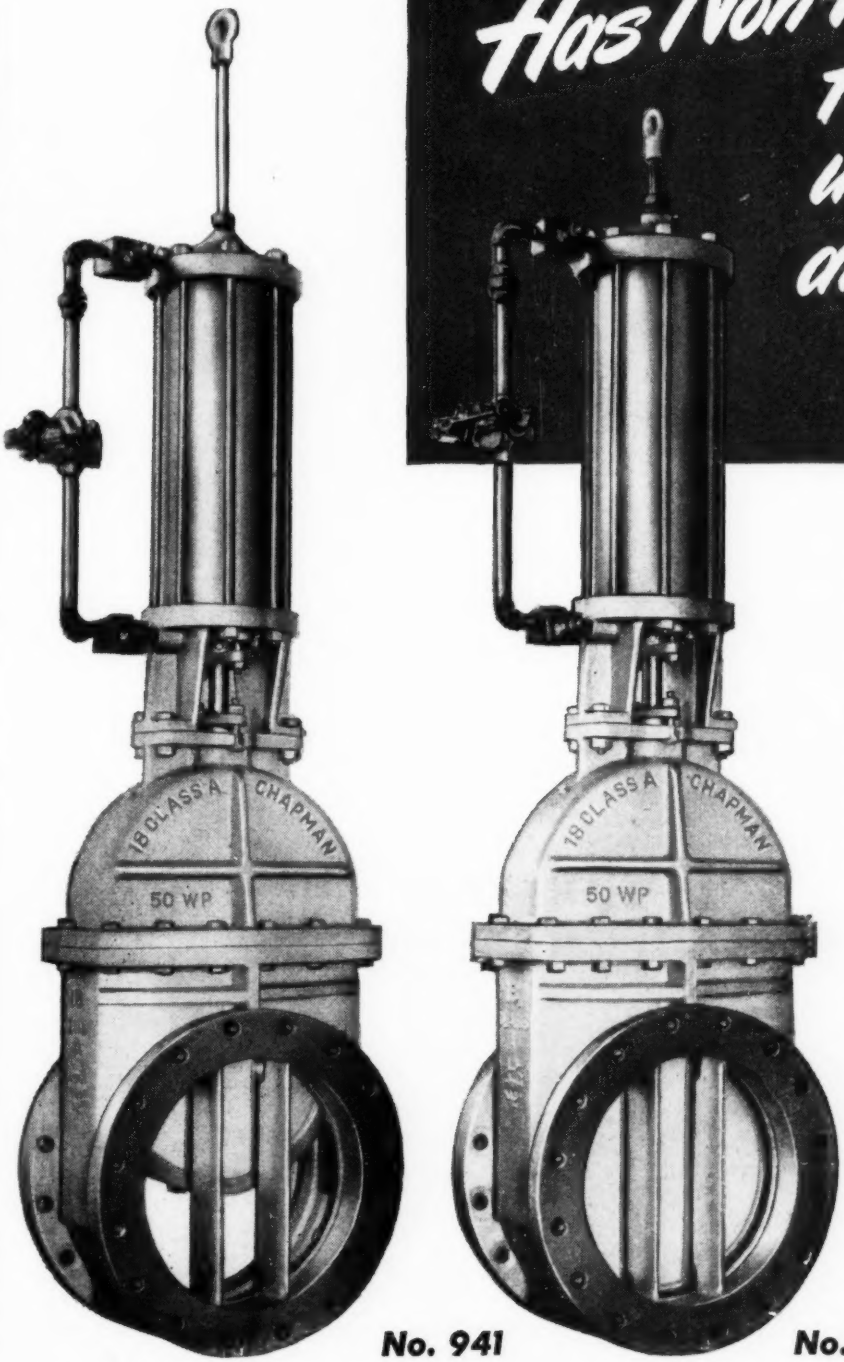
## ARMCO ASBESTOS-BONDED SEWER PIPE

# CHAPMAN

## BEAMED WATERWAY GATE VALVE

*Has "Non-Tipping" Disc to eliminate uneven wear and minimize leakage*




No. 941 No. 940

Recognizing the need for a more efficient valve than the double disc, parallel seated gate valve used under throttling conditions, Chapman engineers developed the Beamed Waterway Gate Valve.

This valve is designed to provide sufficient bearing contact for the downstream disc to prevent its tipping into the waterway. This is effected by means of bronze-faced vertical beams in the downstream port, which contact bronze strips in the adjacent disc. The bronze facings are in the same plane with the seat and disc ring faces, thus increasing the bearing contact between disc and body seat facings from six to ten times when the valve is in the one-quarter or one-half open positions. There is no uneven wear on the seat rings to cause the valve to leak.

Beamed Waterway Gate Valves have been tested in actual operation for more than ten years, and conclusive reports from Water Filtration Plants are now available to engineers. Write to:

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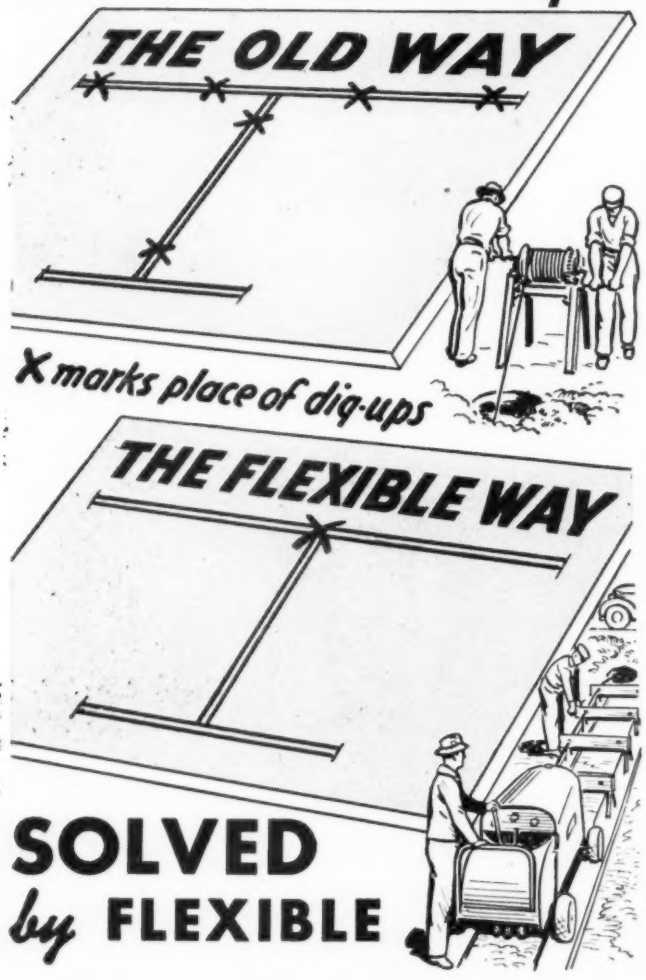
# A PROBLEM...

## IN MATHEMATICS FOR THE *Water Dept.*

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Flexible pipe cleaning service means more than low cost cleaning — it means faster, better jobs with fewer dig-ups and fewer patches in the street.

Flexible's specialized equipment and "know-how" can save money for your city. Call the nearest Flexible representative and get an estimate for cleaning all or part of your pipe line system.

**HOW MUCH DOES A DIG-UP COST?**

**Figure the cost of digging, the cost of back filling, the cost of patching, the cost of detouring traffic, the cost of repaving the street — These are the costs of an unnecessary dig-up in the street.**

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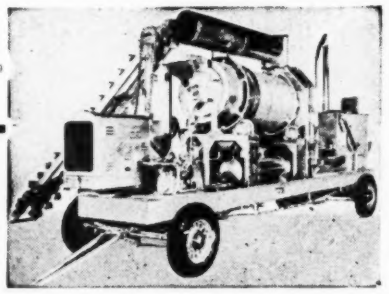
**Cast Iron Pipe and Special Castings, Bell and Spigot, Flange, Flexible Joint, Culvert, Milled and Plain End Tubes, Cylinders, Flanged and Bell and Spigot Fittings, High Pressure Fire Service Pipe, Warren Short Body Specials, Threaded End Pipe.**

***Size 2 to 84-inch***

**Pipe manufactured in accordance with standard specifications adopted and approved by water works associations and engineers.**

**Warren Foundry & Pipe Corp.**
**11 Broadway, New York City**

**Warren Pipe Co. of Massachusetts**
**75 Federal Street, Boston, Mass.**



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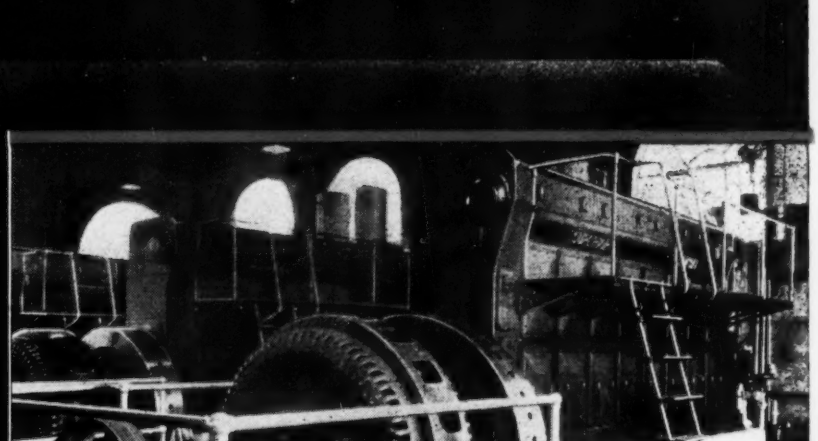
# . . . . that only performance can reveal



Municipal Light & Power Plant, Paragould, Arkansas

**SUPERIOR DIESELS** • STATIONARY, 28 to 1325 H. P.
MARINE, 28 to 1325 H.P. • GENERATOR SETS, 20 to 930 kw.

• Superior **ENGINES**
Division of
THE NATIONAL SUPPLY CO.
*Plant and General Sales Office:* Springfield, Ohio

# *Soft* WATER CAN HELP SOLVE A *hard* PROBLEM MANY CITIES MUST FACE IN POSTWAR . . .

How to attract industry . . . how to make citizens happy and contented—this is the problem confronting municipal management as the end of the war approaches.

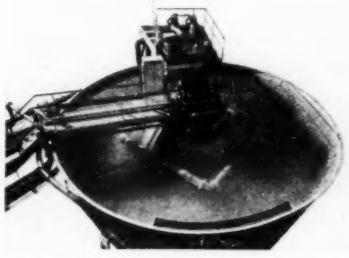
One thing that's sure to click, with industrialist and resident alike, is *good* city water—water free of hardness, dirt and iron.

Permutit* Water Conditioning equipment removes the impurities found in all natural water supplies. It makes a city completely independent of local water conditions.

Your city's future can be brighter than ever with soft, clear water sparkling from every faucet in town. Get the facts *now* about Permutit's economical equipment.

Write to The Permutit Company, Dept. G3, 330 West 42nd St., New York 18, N. Y., or Permutit Company of Canada, Ltd., Montreal.

*Trademark Reg. U. S. Pat. Off.



**PERMUTIT SPAULDING PRECIPITATOR** removes water hardness, dirt and color by the sludge blanket process. This new-design equipment cuts detention time, saves chemicals, takes only half the space of former methods. This is one of several Permutit methods for treating water supplies.

# PERMUTIT

WATER CONDITIONING HEADQUARTERS

# *Save...*

## *Time, Money and Labor in making pipe joints*

*« « « The only field equipment necessary to make a Universal Cast Iron Pipe Bolted Joint is a Ratchet Wrench.*

*by using*

# UNIVERSAL
## CAST IRON PIPE

(PIPE and JOINT are ONE)

**Outstanding Advantages:**

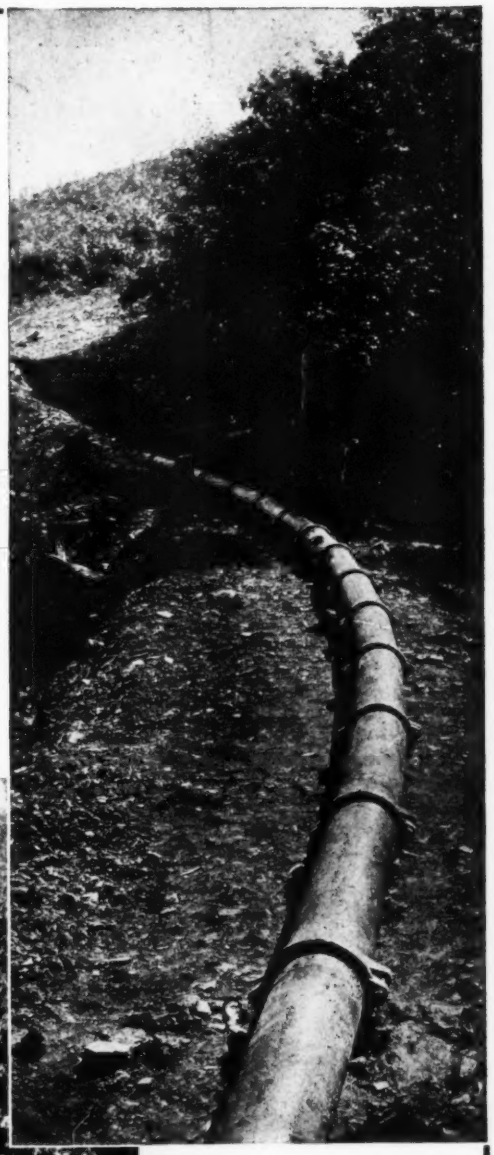
1. *No calking or pouring of lead or lead substitutes. No gaskets used.*
2. No bell holes to dig. Can be laid in a narrow trench. Cost of wide trenching is eliminated.
3. *Can be laid with SPEED. Easier and cheaper to install because only two bolts need to be inserted in the lugs, tightened with a ratchet wrench (the only tool needed), and the completed joint is made in a few minutes. Experienced workmen are not needed.*
4. Nothing to deteriorate; nothing to work loose; no leakage; no maintenance cost.
5. Flexibility: Universal pipe is very flexible. It withstands expansion, contraction, unequal settlement, vibration and shock, and electrolysis. Many curves are laid with straight lengths and do not need special fittings.
6. *Universal pipe can be laid on rocky soil, under water and in sub-zero weather.*

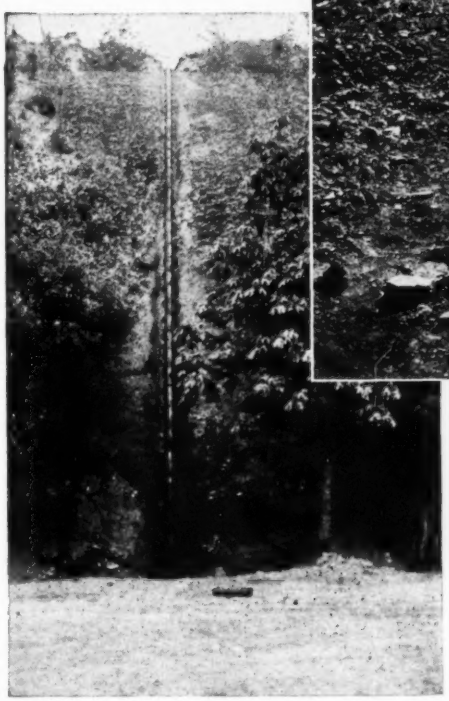
**Specify UNIVERSAL PIPE for water mains and sewers**

Furnished in hot tar dipped, cement lined, and enameline lining.

Quick service to customers: By rail, truck or water from our foundries and warehouses located from coast to coast.

**THE CENTRAL FOUNDRY CO.**
386 FOURTH AVENUE, NEW YORK 16





**Above** *All straight lengths of Universal pipe in this curve.*

**At left** *16" pipe laid on a 45-degree slope. Note deflection at top to level ground without fittings.*

**USE THE COUPON**

*DEPT. C*

**THE CENTRAL FOUNDRY COMPANY**
386 Fourth Avenue, New York 16

I am interested in SAVING LABOR, TIME, MONEY and EQUIPMENT in pipe-laying. Send me the UNIVERSAL catalog.

*Name* .....

*Position* .....

*Address* .....

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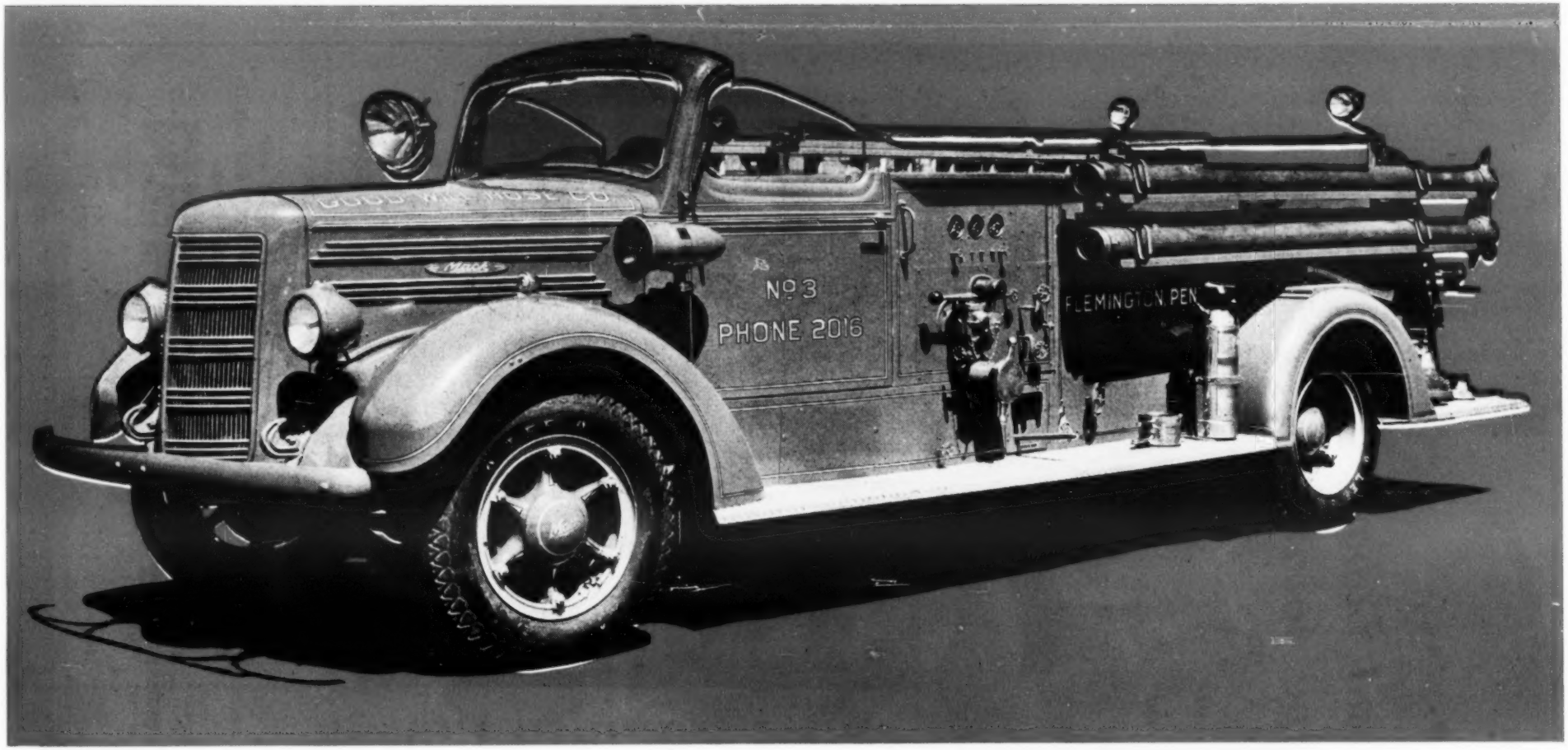



***Since 1911, the name "Mack"*** has meant dependable fire apparatus . . . built to get to a fire fast and put it out quickly. Mack's reputation for dependability where dependability counts most is one big reason why the Flemington, Pa., Fire Department chose a Mack Type 45 Pumper. Mack's handling ease and ability to take punishment and keep on pumping water is another. Firemen in Flemington and all over America know you can't beat a Mack!

***IF YOU'VE GOT A MACK, YOU'RE LUCKY . . . IF YOU PLAN TO GET ONE, YOU'RE WISE!***

**Mack**
**FIRE APPARATUS**

*If your community needs additional fire-fighting equipment or replacements, think of Mack. Remember, Mack Fire Apparatus is backed by the greatest engineering resources in the industry.*

**Mack Manufacturing Corporation, Fire Engine Division**
**Empire State Building, New York 1, N. Y.**

## WHEN LIFE HANGS BY A THREAD!

Remove the nozzle-cap . . . couple-up the hose . . . turn the operating-nut. Lives hang by a thread in all these operations. And in Mathews hydrants, the threads, whether standard or specially made for your needs, are designed and manufactured for dependability. For more than seventy years, every feature of the Mathews design, from operating-nut shield at top to bronze elbow-bushing at bottom, has been consistently developed and improved. Today, more than 400,000 Mathews hydrants in all climates and countries testify to the reliability of the design, the correctness of the manufacture. For long life, low maintenance, and for quick, sure operation when lives depend upon it, specify Mathews for your community.

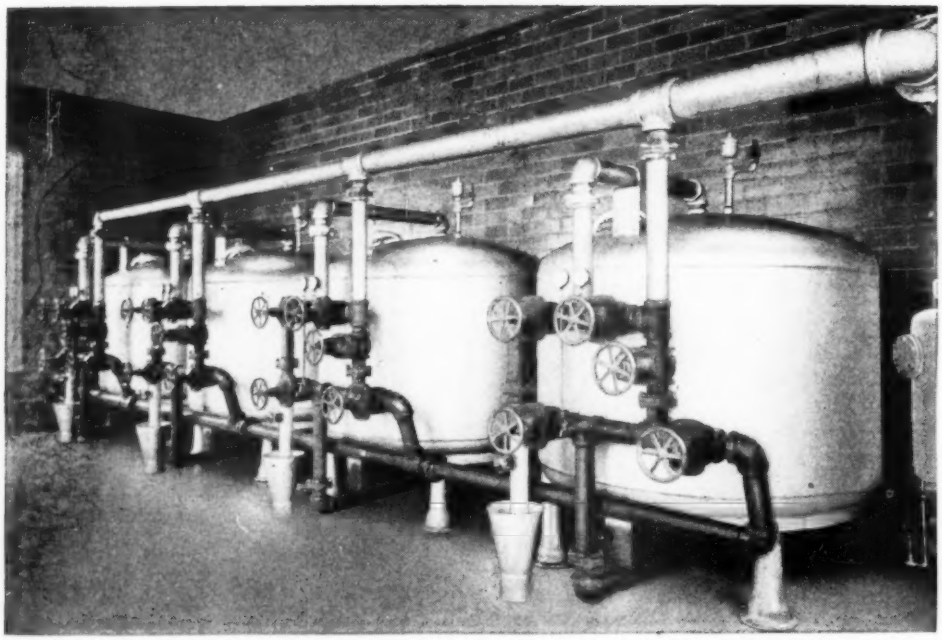
**MATHEWS HYDRANTS**

*Made by* **R. D. WOOD** *Company*

400 CHESTNUT STREET, PHILADELPHIA 5, PA.

MANUFACTURERS OF SAND SPUN PIPE (CENTRIFUGALLY CAST IN SAND MOLDS) AND R. D. WOOD GATE VALVES

# Now... PURE FILTERED WATER at low cost!



*Typical municipal installation of Graver Water Filters*

*You'll want this FREE book.* Just off the press . . . a new illustrated bulletin on Graver Swimming Pool Equipment. Especially valuable to municipal and consulting engineers for use in writing up swimming pool specifications. Write for your free copy *today*.

PURE WATER is essential in any community. With Graver Water Conditioning equipment it's simple and easy to have . . . at low cost.

Whatever the condition of your raw water, Graver can supply the equipment to meet your needs . . . to soften . . . to filter out suspended matter and sediment . . . to remove iron oxide or oil . . . or to eliminate undesirable tastes and odors.

Graver Water Treating equipment is individually designed for each application, scientifically engineered, built for years of trouble-free service, and can be depended upon to deliver pure conditioned water at an amazingly low cost.

No matter what your water conditioning problem may be, consult Graver at once and get the benefit of more than thirty years of experience in water conditioning. Full details and cost estimates gladly supplied.

**GRAVER**
**WATER CONDITIONING EQUIPMENT**

*Process Equipment Division*
*of*
**GRAVER TANK & MFG. CO., INC.**
**4809-35 Tod Ave., East Chicago, Ind.**

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Lime and Soda Water Softeners • Zeolite Water Softeners • Water Filters
Iron Removal Filters • Taste and Odor Removal Filters • Oil Removal Filters • Demineralizers • Chemical Mixing and Feeding Equipment
Swimming Pool Equipment

# TEN REQUIREMENTS
## FOR UNDERGROUND MAINS
## *under normal conditions*

**Long Life:** In evaluating bids, the useful life of cast iron pipe is figured at 100 years minimum.

**Carrying Capacity:** The carrying capacity of standard tar-coated cast iron pipe remains practically unimpaired for centuries. For the certain areas where tuberculating water is encountered, cement-lined cast iron pipe is available. Under such conditions, no other material offers the combined long life and sustained carrying capacity of cement-lined cast iron pipe.

**Tight Joints:** For *ordinary* pressures, cast iron bell-and-spigot pipe—for *high* pressures, cast iron mechanical joint pipe—are known to be leak-proof.

**Tensile Strength:** When tested under hydrostatic pressure to destruction, the ultimate tensile strength of cast iron pipe is a minimum of 11,000 p.s.i. for pit cast pipe and a minimum of 18,000 p.s.i. for cast iron pipe made by other methods.

**Beam Strength:** Under beam stress tests, 10 ft. span, standard 6" cast iron pipe sustains a load of 15,000 pounds and bends approximately one inch before breaking.

**Toughness:** Under hydrostatic pressure and the impact of a 50 lb. hammer, standard 6" cast iron pipe does not crack until the hammer is dropped four feet.

**Internal Pressure:** An average of many internal hydrostatic pressure tests on standard 6" cast iron pipe shows this pipe withstands more than 2500 pounds pressure per square inch.

**External Load:** In regulation ring compression tests, standard 6" cast iron pipe withstands a crushing weight of more than 14,000 lbs. per foot.

**Imperviousness:** The walls of cast iron pipe are impervious to leakage, seepage, or sweating of water, gas or chemicals under internal pressure tests.

**Tapping:** Cast iron pipe can be tapped cleanly with strong, tough threads, losing little in structural strength.

**Other pipe materials meet some of these requirements but only cast iron pipe meets them all.**

Whether a pipe material is able to fulfill these requirements is a matter of experience rather than prediction. A page of history is worth a volume of sales claims. History proves that cast iron pipe has been meeting these ten requirements for generations.

Cast Iron Pipe Research Association, Thomas F. Wolfe, Research Engineer, Peoples Gas Building, Chicago 3.

# CAST IRON PIPE
## *SERVES FOR CENTURIES*

# Speed Sweep
## WITH A BACK OF STEEL

## MAKES LIGHT WORK OUT OF TOUGH JOBS

Steel back of Speed Sweep brushes is the basis of unique construction for faster, easier, better sweeping. Block is narrower—easier to handle. Tufts of longer, better fibres are more compact—provide "spring and snap" action. Handle instantly adjustable to height of sweeper, reduces fatigue and strain. Speed Sweep brushes are built to outlast ordinary brushes 3 to 1.

### Heavy Duty *Speed Sweep* Brushes

of heavy oil and water resistant Bassine fibre for rough wood floors, outside cement walks, streets, etc.

PRICES

| Catalog No. and Size | Lots of: 1 | 6 | 12 | 24 |
|---|---|---|---|---|
| No. 411—14" | $2.80 | $2.35 | $1.95 | $1.75 |
| No. 413—18" | 3.00 | 2.60 | 2.20 | 2.00 |
| No. 416—24" | 3.55 | 3.15 | 2.70 | 2.50 |

### Double Duty *Speed Sweep* Brushes

have two center rows of heavy Bassine fibre for rough dirt and two outside rows of finer Union fibre to control dust.

PRICES

| Catalog No. and Size | Lots of: 1 | 6 | 12 | 24 |
|---|---|---|---|---|
| No. 421—14" | $2.95 | $2.55 | $2.15 | $1.95 |
| No. 423—18" | 3.35 | 3.00 | 2.55 | 2.35 |
| No. 426—24" | 3.85 | 3.45 | 3.05 | 2.80 |

*(All prices F. O. B. Milwaukee — Quantity prices apply on mixed orders.)*

**FULLY GUARANTEED—ORDER TODAY**

Speed Sweep brushes have proved their superiority in so many uses and under such varied conditions that they are unconditionally guaranteed to meet your requirement. For prompt shipment extend AA-5 or higher priority rating.

MD

**MILWAUKEE DUSTLESS BRUSH COMPANY**

520 NORTH 22nd STREET, MILWAUKEE 3, WISCONSIN



# *Remove*
## IRON AND MANGANESE WITH
# OZONE

**OZONATION**—the modern "tasteless" way to remove tastes, odors, and color—is especially effective in removing soluble iron or manganese or complex iron-organic compounds from water.

*Complete removal too without having to adjust the pH.*

**OZONATION**—precipitates manganese as manganese dioxide and iron as ferric hydroxide.

Coagulation and filtration remove these precipitates, leaving a sparkling, palatable water, free from these troublesome impurities.

In addition, ozonation sterilizes.

Post-war ozonation equipment, the product of several years' development and design, will be:

1. Rugged, dependable, and simple to operate.
2. Economical to operate on today's low electric energy costs.

A copy of our new Bulletin 105—"Ozone in Water Treatment"—gladly sent upon request.

**OZONE PROCESSES**
*INCORPORATED*
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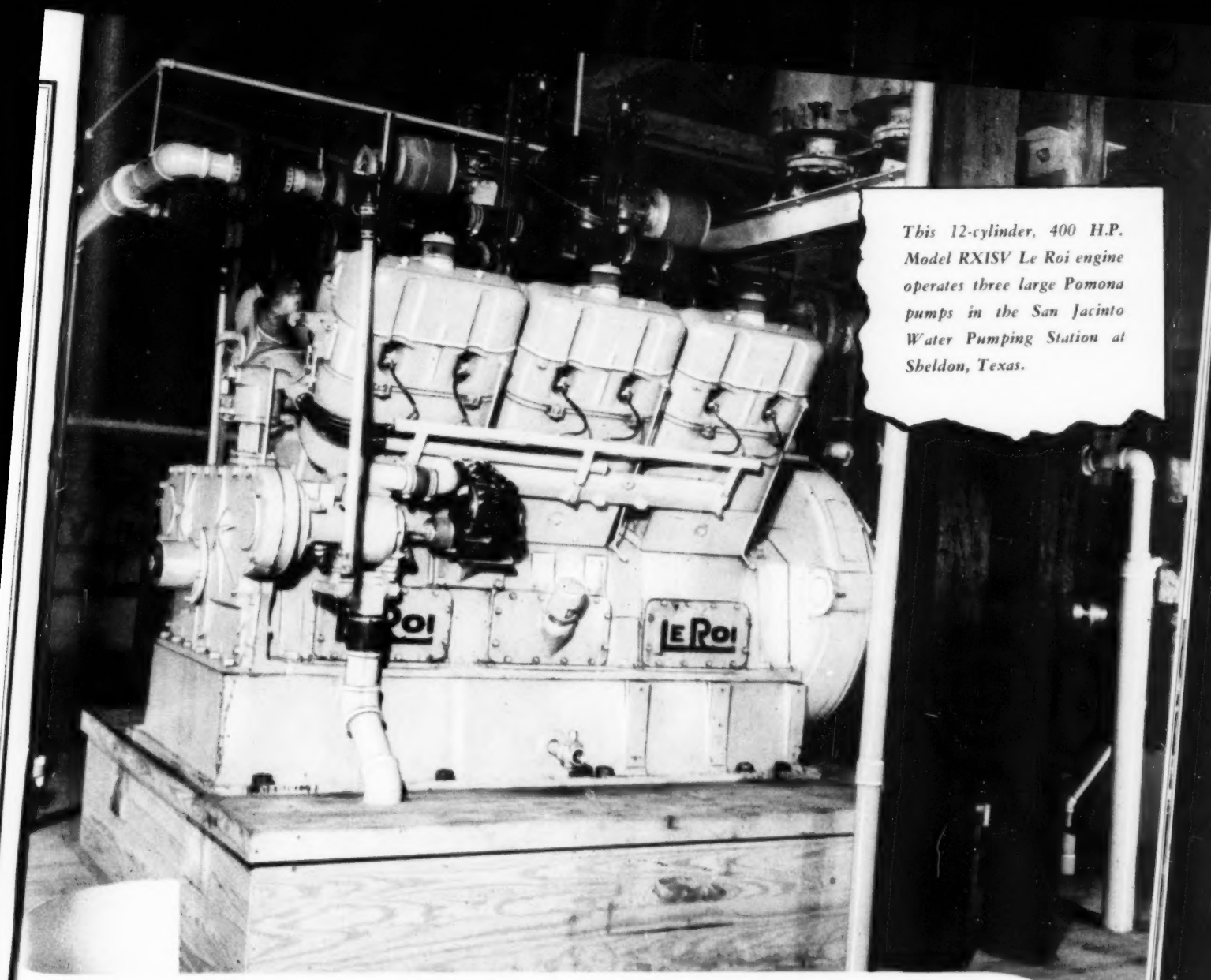



*This 12-cylinder, 400 H.P. Model RXISV Le Roi engine operates three large Pomona pumps in the San Jacinto Water Pumping Station at Sheldon, Texas.*

# For dependable, low-cost power that backs up your good judgment, *insist on*

# LE ROI ENGINES

In municipal service, Le Roi engines have won the praise of men who are responsible for the unfailing operation of their equipment. One of the underlying reasons for the thoroughly dependable operation of Le Roi engines is the fact that they are built by a manufacturer *concentrating exclusively* on the problems of the heavy-duty field. Le Roi engines have the weight and stamina to take the punishment of continuous operation without costly breakdowns. They have the quality features that give you more for your money — precision machining that gives you smooth operation — reserve power that carries you over the heavy loads.

When you specify "Le Roi" engines, your recommendation is backed by many years of experience in the specialized power requirements of your particular field.

*Write for Complete Information.*

LE ROI
MILWAUKEE

TURN THE PAGE

A Model 105 Le Roi Compressor supplies "air-in-a-hurry" to break pavement on this new driveway job in Milwaukee, Wisconsin.

# LE ROI portable Air Compressors help you beat "completion" dates . .

## by performing dependably when the going is tough

When you need air in a hurry to complete a job before the contract date, depend on a Le Roi Compressor to see you through. It asks no favors or pampering on the toughest kind of jobs.

Because this compressor is the only one in which both engine and compressor are built by the same manufacturer, you get the benefit of: (1) Coordinated action for greater smoothness and efficiency. (2) Low maintenance cost and long life, because BOTH are built to the precision standards of a leading engine builder. (3) Undivided responsibility for performance and service.

Every detail in engine and compressor has been engineered to give you dependable performance. Le Roi Compressors are available in sizes from 60 to 500 c.f.m., gasoline or Diesel powered, on mountings designed to fit your particular needs.

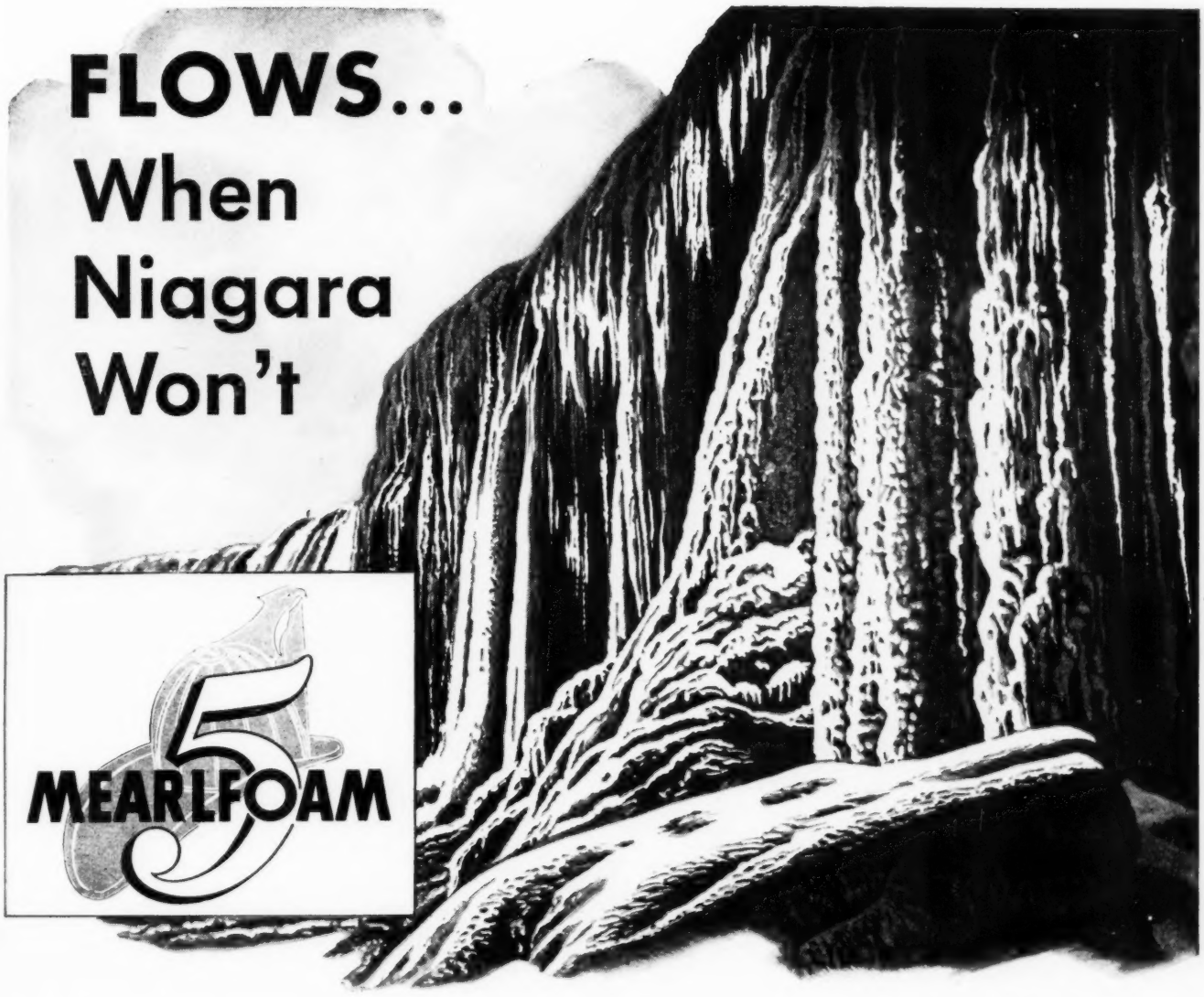
Le Roi distributors are located in key cities throughout the United States and Canada.

Bulletins available — write for them today.

LE ROI COMPANY • 1726 S. 68th St., Milwaukee 14, Wisconsin

LE ROI
MILWAUKEE

# FLOWS... When Niagara Won't




WITH A COMFORTABLE margin of twenty degrees to spare, MEARLFOAM-5 the war-born, blended multi-protein, foaming agent can be depended upon to function at peak efficiency even when water is freezing solid. Calcium-chloride, of course, may be added to water as an anti-freeze . . . but the real point is that neither temperatures down to 12° F. nor the anti-freeze—in any way whatsoever impair the top-flight fire extinguishing performance of this live, long-lasting, blended multi-protein foam. And most important—*There is no gelling and no precipitation when the mercury nearly drops out of thermometer bulbs.*

The many unique and dependable properties of MEARLFOAM-5 are the sole reasons the U. S. Navy uses it extensively for preparedness . . . and for the quick extinguishment of raging gasoline and oil fires on shipboard and at shore bases. MEARLFOAM-5 is the veteran of many successful engagements, and one day will demonstrate to all—the super effectiveness of mechanical (air) foam as the most successful method for combatting gasoline and oil fires. MEARLFOAM-5, after putting fire out—*keeps it out* . . . totally eliminating the flashback hazard which in the past has taken such toll of lives and property.

MEARLFOAM-5 is a good-mixer—with any type of water: *sea water, fresh water, hard or soft water.* It works at maximum efficiency in any climate or atmospheric condition. Its performance is practically constant and invariable over a wide range of conditions. When split-seconds count—you can rely on MEARLFOAM-5 to put fire out fast—to keep fire out *permanently!* A one-page condensed data sheet detailing the unique properties of this war-born fire-fighting foam is now available on request.

*Completely safe and non-corrosive—may be used with standard Mechanical Foam-Forming Equipment*

*FOAM ON FIRE OUT... Stays OUT!*

*THE MEARL CORPORATION*
153 Waverly Place, New York 14, N.Y.

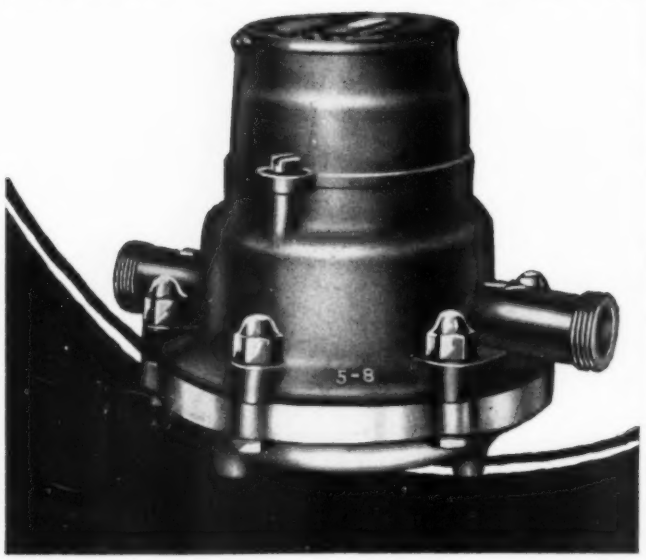
*"POST-WAR"*
*is already here for*
**BUFFALO-MADE AMERICAN BRONZE-CASE WATER METERS**

The quality and performance you want in post-war meters are already being built into every Buffalo-made water meter.

With bronze-case meter manufacture resumed, waterworks can plan now for the metering programs delayed by war conditions.

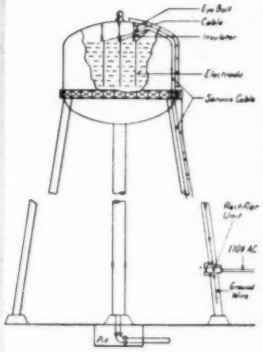
Full information and prices on request to

**BUFFALO METER COMPANY**
2902 Main Street — Buffalo 14, N. Y.



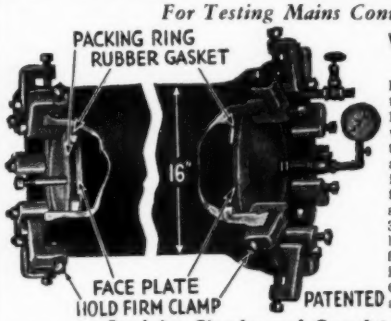

**HOW TO RUST-PROOF SUBMERGED METALS... *Permanently***

DC electric current of low voltage, low amperage, properly balanced and controlled as required by the water through which it passes and the metal it is to protect, prevents corrosion of the metal by oxygen in the water. It therefore *stops rust formation by oxidation.* This is the Electro Rust-Proofing System of Cathodic Protection. It has been applied to thousands of tanks, standpipes, deep wells, flocculators and many other types of water storage and water handling equipment. It is *engineered* to every installation. It stops the formation of rust below the water line totally and permanently, therefore kills the greatest single item of tank maintenance cost, the major cause of tank depreciation. Recognized and advocated by independent authorities. Write for free data.



**ELECTRO RUST-PROOFING *Corporation***
DAYTON 10, OHIO, U. S. A.

"HOLD FIRM"
**A NEW TEST PLUG**
*For Testing Mains Conveying*




WATER GAS OIL AIR

For testing cast iron, steel, transite, soil and concrete pipe lines, without the necessity of valves; test pipe as you lay them; eliminate open trench and hazards; special for testing reclaimed pipe, valves and fittings. Installed by any unskilled laborer; withstands 300 lbs. hydrostatic pressure, light in weight; same clamps fit many sizes of pipe. Made in all sizes. Used by the City of Chicago, contractors and municipalities.

*Send for Circular and Complete Information*
TEST PLUG MFG. CO. (not Inc.) — SKOKIE, ILL.

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NEW CONSTRUCTION—REPAIRS

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| PRESTRESSED TANKS | STEEL ENCASEMENTS |
| RESERVOIR LINING | DAM REPAIRS |
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| SMOKE STACK LINING | SEWER REPAIRS |

DISINTEGRATED CONCRETE ABUTMENTS RENEWED
REPAIRS TO ALL TYPES OF MASONRY

*Write for our Bulletins*
**PRESSURE CONCRETE CO.**
*Engineers & Gunite Contractors*
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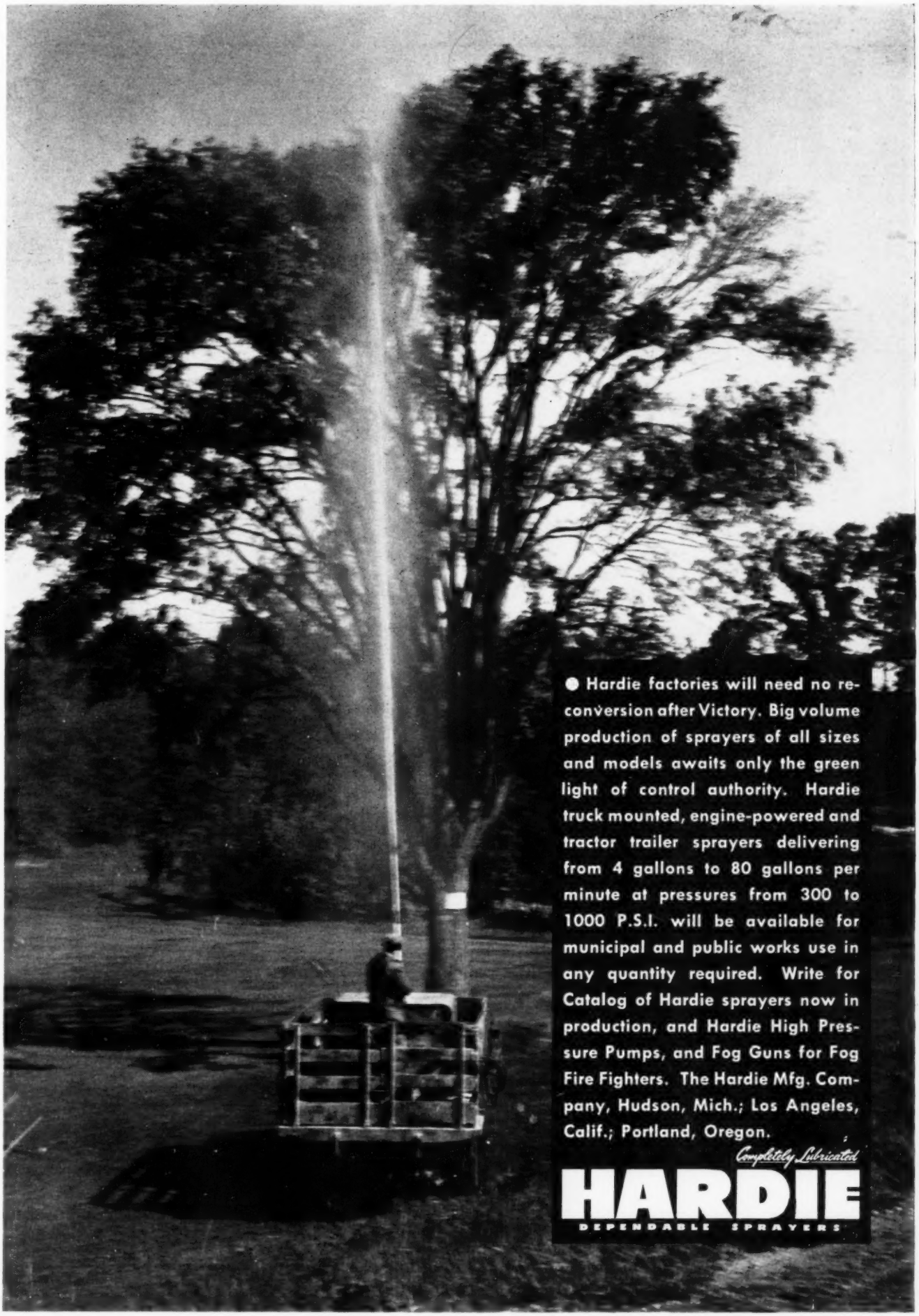
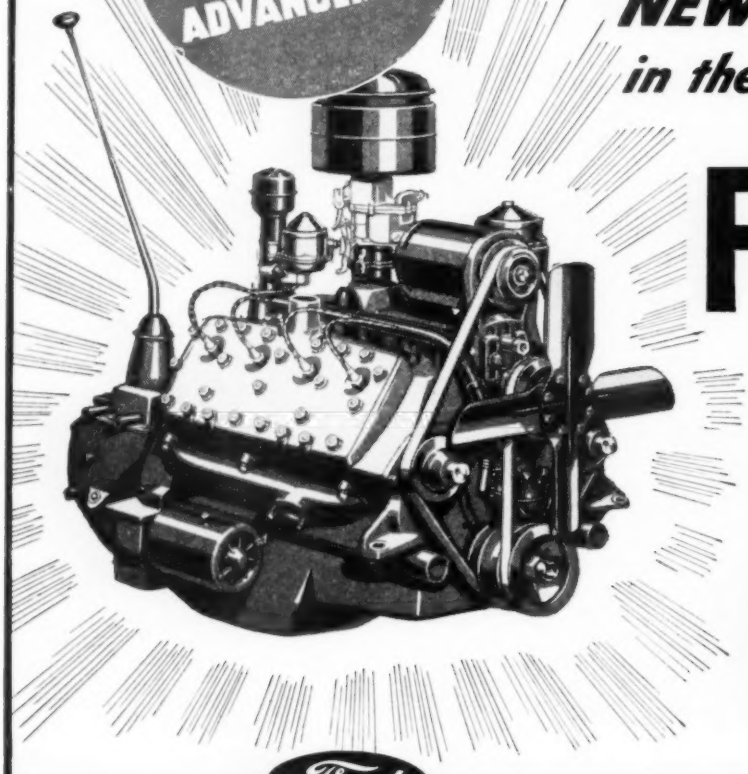

● Hardie factories will need no reconversion after Victory. Big volume production of sprayers of all sizes and models awaits only the green light of control authority. Hardie truck mounted, engine-powered and tractor trailer sprayers delivering from 4 gallons to 80 gallons per minute at pressures from 300 to 1000 P.S.I. will be available for municipal and public works use in any quantity required. Write for Catalog of Hardie sprayers now in production, and Hardie High Pressure Pumps, and Fog Guns for Fog Fire Fighters. The Hardie Mfg. Company, Hudson, Mich.; Los Angeles, Calif.; Portland, Oregon.
Completely Lubricated
HARDIE
DEPENDABLE SPRAYERS

AN IMPORTANT ENGINEERING ADVANCEMENT



*Ford Announces*

***NEW DEVELOPMENTS***

*in the Heavy Duty 100 H.P.*

# FORD V-8 TRUCK ENGINE

Ford

## *Here's Good News*

### FOR TRUCK OPERATORS

The Model 59 engine is now offered as original equipment only. It will eventually be made available as a service replacement in Ford Trucks and Commercial units already on the road.

Here are some of the important improvements in this engine:

**NEW** long-life Tri-Alloy connecting rod bearings . . . **NEW** aluminum alloy pistons with four rings for oil economy . . . **NEW** larger capacity oil pump with more screen area for improved lubrication . . . **NEW** crankshaft rear bearing oil seal . . . **NEW** rust-proofed valve springs . . . **IMPROVED** cooling of valve seats . . . **NEW** flat-type waterproof distributor with full automatic advance and vacuum control . . . **NEW** high efficiency fan . . . **IMPROVED** carburetion . . . **IMPROVED** intake manifold for easy vacuum pipe connections . . . **SIMPLIFIED** design provides easier accessibility for service . . . clutch can be replaced without removing oil pan . . . more parts are interchangeable, reducing the number of service items required.

IT'S HERE—the first of wartime truck engineering developments by Ford to be made available to civilian operators.

An improved Heavy-Duty, 100 H.P. V-8 Engine now powers Ford Trucks and Commercial units which are in limited production for civilian priority holders.

This great power plant is the Model 59. You'll be hearing a lot about its fine qualities. It includes many of the Ford Truck engineering advancements made in response to military needs which are proving valuable in civilian trucking.

These improvements, affecting virtually every operating part of the engine, raise Ford Truck engine performance to new high levels of stamina, economy and efficiency—with new and important *service* benefits of interest to every truck owner and maintenance man.

Read about them in the text at the left.

**FORD MOTOR COMPANY**

# Making little ones out of *big* ones

**PORTABLE PLANTS**

Austin-Western Portable Crushing and Screening Plants are made in a wide variety of types and sizes; each complete with whatever is required in the way of conveyors, screens and bins.

• Key to the successful and profitable operation of any plant is the crusher itself . . . reason enough for the painstaking engineering behind every Austin-Western jaw and roll model.

Exclusive features increase output, assure constant operation and reduce maintenance costs.

The same skilled engineering characterizes each and every Austin-Western crushing and screening plant, from the most simple to the most elaborate; each tailor-made to the requirements of a particular production problem.

**AUSTIN-WESTERN COMPANY,**
**AURORA, ILLINOIS**

PRIMARY UNIT

SECONDARY UNIT

**TWO-UNIT AND THREE-UNIT PLANTS**

Suitable for either pit or quarry use, these plants are capable of delivering highest tonnages of aggregate in accurately controlled sizes. Frequently, each unit is capable of producing material that meets job requirements, in which case the individual units can be used separately as shown in the photographs above. Such flexibility of operation spells maximum profits for the owner.

BUILDERS OF ROAD MACHINERY SINCE 1859

**Austin Western**

BUY MORE WAR BONDS

# Low Cost Insurance
## FOR SERVICE PIPING

STREAMLINE Copper Service Pipe represents one of the lowest cost forms of insurance that water works officials, who are responsible for the return on a heavy capital investment, can adopt.

In normal times STREAMLINE Copper Pipe compares very favorably in cost with ferrous pipe, yet with the exception of certain abnormal soil and water conditions, it never has to be replaced due to rust or internal corrosion. Consequently, there is no discoloration of the water nor decrease in volume or pressure, such as is invariably found, after a few years, with corrodible piping.

Leaks due to vibration are eliminated. A STREAMLINE Copper Service Pipe installation is practically vibration proof, settlement of filled earth or water mains have little or no effect upon it. Its quality of ductility permits sufficient stretch to take care of this condition without failure of the pipe.

STREAMLINE Service Pipe (Type K) is the original copper service pipe, and the first to be produced in America for water service work. It is the most uniformly soft and pliable pipe possible to secure—it is kept that way through the use of the best copper obtainable for the purpose and through strict laboratory control through every phase of its manufacture.

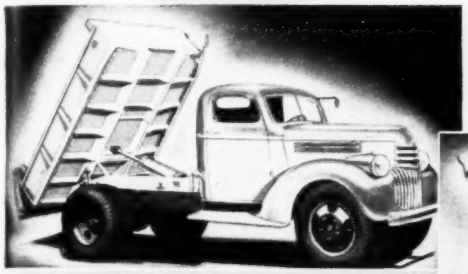
When your plans call for pipe and fittings for replacement or for postwar work, carefully consider STREAMLINE. Its use will repay you many times over.

**STREAMLINE**
**PIPE AND FITTINGS DIVISION**
**MUELLER BRASS CO.**
**PORT HURON, MICHIGAN**

# GAR WOOD TRUCK EQUIPMENT

## FOR YOUR SPECIALIZED JOB

GAR WOOD INDUSTRIES, INC. GW TRADE MARK



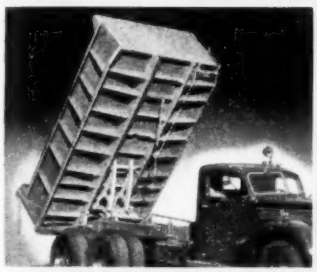
Cam and Roller Hoist for long wheelbase chassis. High ground clearance for piling.

Direct-Lift Hoist. Body has trussed understructure, an exclusive feature.

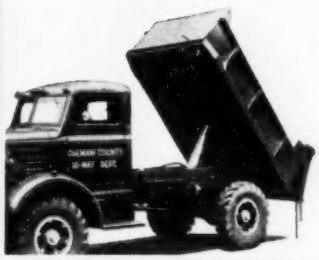
***Hydraulic and Mechanical Hoists, Dump Bodies, Winches, Cranes and Tanks, Including Flushers and Sprinklers for Trucks and Trailers***

The units described on this page will give you an idea of the diversified line built by Gar Wood. Get your job done efficiently by selecting the equipment designed to fit your particular needs. Remember that Gar Wood is the world's largest manufacturer of truck and trailer equipment, and years of experience back up each unit. Be sure of dependable, top-notch performance . . . specify GAR WOOD.

*Support the 7th War Loan Drive BUY MORE BONDS*

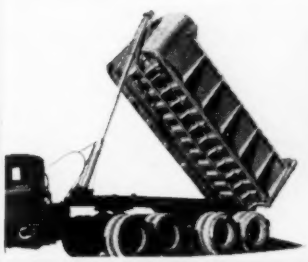


Typical installation for Six-wheelers.

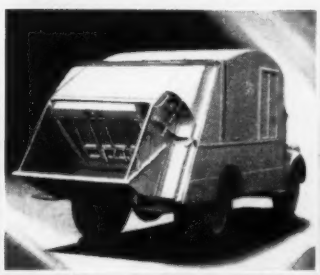


Telescopic Hoist. Heavy-Duty Body.

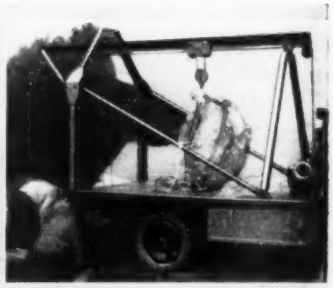
Dual Telescopic Hoist and Rock Body. Dawn-folding gate.



Vertical Telescopic Hoist for long bodies.



Load-Packer. Compresses garbage and rubbish. Greater loads—fewer trucks and men required.

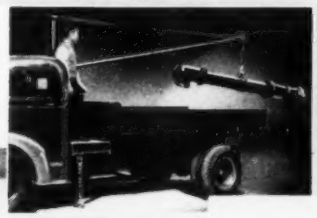


Tree-Moving Crane picks up, transports and re-sets trees.

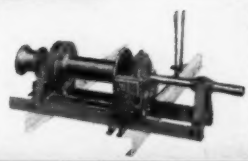
Hydraulic Repair Tower.

Tanks for all types of liquids.

Street Flushers and Sprinklers.



Cranes. All types and sizes for handling pipes, machinery, etc.



Utility Winches in both single or double drum types.

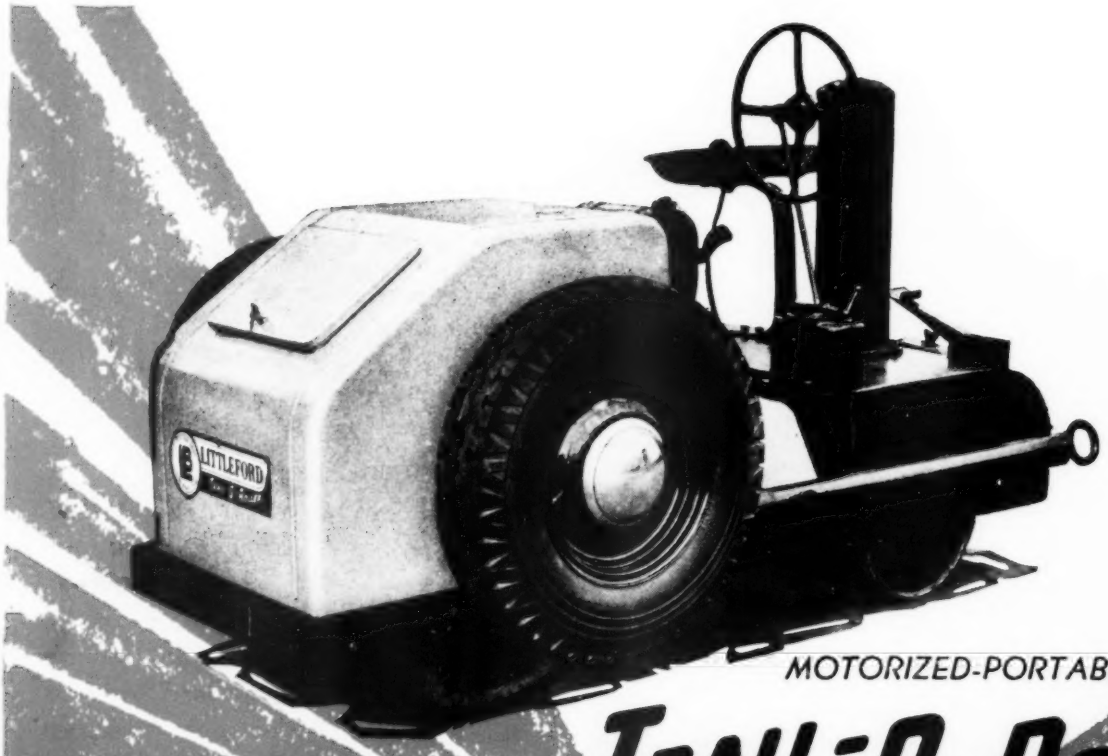
**Branches and Distributors in All Principal Cities**

## GAR WOOD INDUSTRIES, INC.

**DETROIT 11, MICHIGAN**

**World's Largest Manufacturers of Truck and Trailer Equipment**

HOISTS AND BODIES • WINCHES AND CRANES • TANKS • ROAD MACHINERY • HEATING EQUIPMENT • MOTOR BOATS




MOTORIZED-PORTABLE

# TRAIL-O-ROLLER

Model No. 155 Trail-O-Roller will roll Hot Mix, Cold Mix, Clay Subgrades and Brick Surfaces. For rolling Airport Runways, Roads, Streets, Highways, or Parking Areas, it has no equal.

Dozens of repair jobs can be rolled in a day's time—the Trail-O-Roller will trail behind a truck or tractor at any speed. When on the job, it can be changed from the trailing to the rolling position, or rolling to trailing position, in two minutes' time. The compaction is equal to a 5-ton tandem.

The Trail-O-Roller is small, compact and easy to operate—it saves time and labor. For efficiency in rolling, have a Trail-O-Roller on the job.

**LITTLEFORD BROS., INC.**

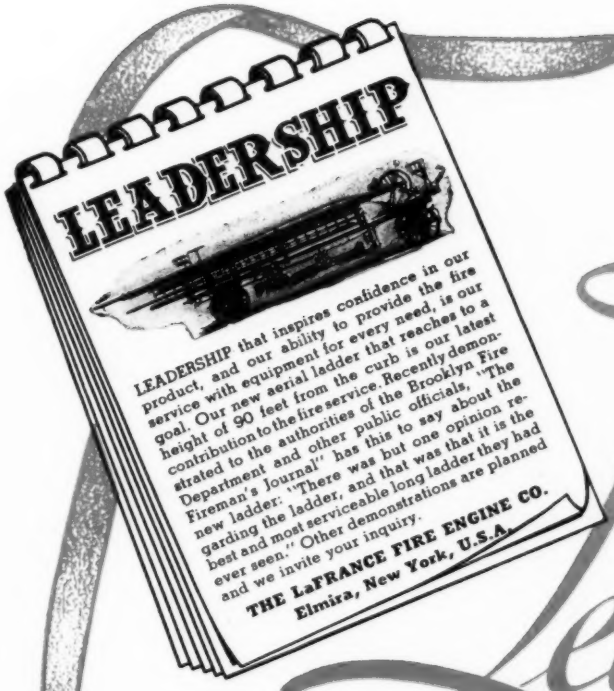
**500 E. Pearl St. Cincinnati 2, Ohio**

LB LITTLEFORD

BUILT FOR ROAD MAINTENANCE EQUIPMENT SINCE - 1930

Operator sits in a comfortable operating position and all controls are within easy reach.

The Trail-O-Roller is highly portable—the tongue can be slipped in place in no time. Fastened to any truck, the Trail-O-Roller is perfectly balanced to trail at high speed.


LEADERSHIP
LEADERSHIP that inspires confidence in our product, and our ability to provide the fire service with equipment for every need, is our goal. Our new aerial ladder that reaches to a height of 90 feet from the curb is our latest contribution to the fire service. Recently demonstrated to the authorities of the Brooklyn Fire Department and other public officials, "The Fireman's Journal" has this to say about the new ladder: "There was but one opinion regarding the ladder, and that was that it is the best and most serviceable long ladder they had ever seen." Other demonstrations are planned and we invite your inquiry.
THE LaFRANCE FIRE ENGINE CO.
Elmira, New York, U.S.A.

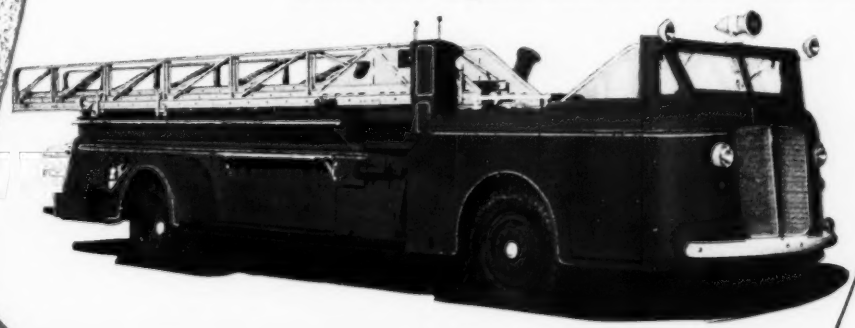
# Leadership

today carries a greater responsibility to the fire service than required 75 years ago when the above pictured aerial truck was built. Since that time refinement and improvement in aerial ladder and truck design has been almost continuous to meet the changing needs of the fire service. American LaFrance is building the most complete line of modern aerial ladder trucks for the fire service. Four wheel and tractor drawn types are available to meet every need. The line of 4-wheel aerials is complete with aerial ladders available in lengths of 65 feet, 75 feet, 85 feet or 100 feet. All models are amply powered for road performance in keeping with modern traffic requirements.

The all-steel aerial ladder is one man operated with hydraulic power. The entire ladder is constructed of high tensile strength, corrosion resisting U.S.S. Cor-ten steel, and is the strongest aerial ladder ever offered to the fire service. Every safety feature essential to the control and operation of the aerial ladder is built into the structure. The highly maneuverable, compact yet accessible design of the 4-wheel aerial is finding increasing favor of the fire service for such reasons as:

**LOWER COST** — **BETTER DRIVER VISION**
**SHORTER LENGTH** — **EQUAL UTILITY**
**LIGHTER WEIGHT** — **GREATER STABILITY**
**BETTER ROAD PERFORMANCE**

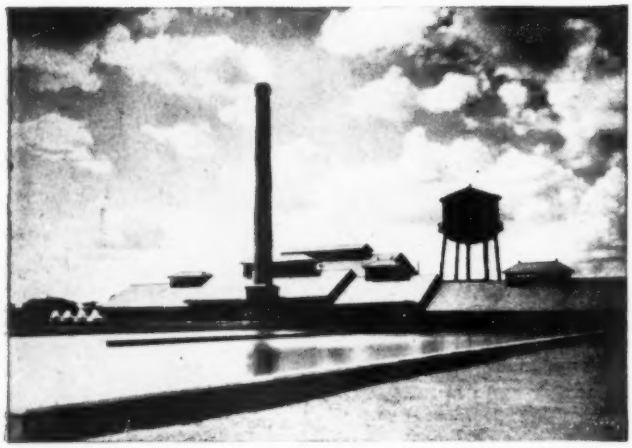
*Write for complete data on these modern aerials.*



Recent deliveries of these 4-wheel aerials have been made to:
**Ithaca, New York**
**Hudson, Mass.**
**Eureka, Calif.**
**Houston, Texas**
**Lincoln, Nebr.**

**AMERICAN-LA FRANCE-FOAMITE CORPORATION**
ELMIRA, NEW YORK, U. S. A.
**LA FRANCE FIRE ENGINE AND FOAMITE LIMITED**
TORONTO, 9, ONTARIO, CANADA

# GENERAL CHEMICAL "ALUM"
## . . . EQUALLY EFFICIENT FOR COAGULATION OF *WATER and SEWAGE!*



Today, aluminum sulfate is almost universally accepted by water experts as the best coagulant for the removal of turbidity, color and bacteria from water . . . and General Chemical Aluminum Sulfate is the outstanding choice the nation over. The reason? Operating men have come to rely on its high quality and constant uniformity, knowing that the effectiveness of General Chemical Alum has been "proved in settling basins all over America."

Municipal officials in charge of sewage disposal find that clarity and purity of sewage effluent are also easily obtainable with General Chemical Aluminum Sulfate because of the many reasons noted below. Why not join the majority of American cities that prefer General Chemical Alum—and specify "General" for your requirements?

### ★ FOR WATER WORKS

1. Produces crystal-clear water.
2. Gives better floc formation resulting in longer filter runs.
3. It is a low-cost coagulant.
4. Has no chlorine demand, conserving chlorine exclusively for disinfection.
5. Superior in tests against other coagulants.
6. High in quality, its constant uniformity can be counted upon.
7. Aids in the reduction of tastes and odors.

### ★ FOR SEWAGE PLANTS

1. Clean, easy to handle, dry feeds well, and economical to use.
2. Simple application, requires only low cost feeding apparatus and minimum attention.
3. Clear, colorless effluents are possible.
4. Sludge digests readily.
5. Treated digested sludge dries quickly, with a minimum of odor.
6. Chlorine consumption is cut due to lower demand of clarified sewage.

BASIC CHEMICALS

GENERAL CHEMICAL COMPANY

FOR AMERICAN INDUSTRY

*"Preferred by Most American Cities"*

**GENERAL CHEMICAL COMPANY**

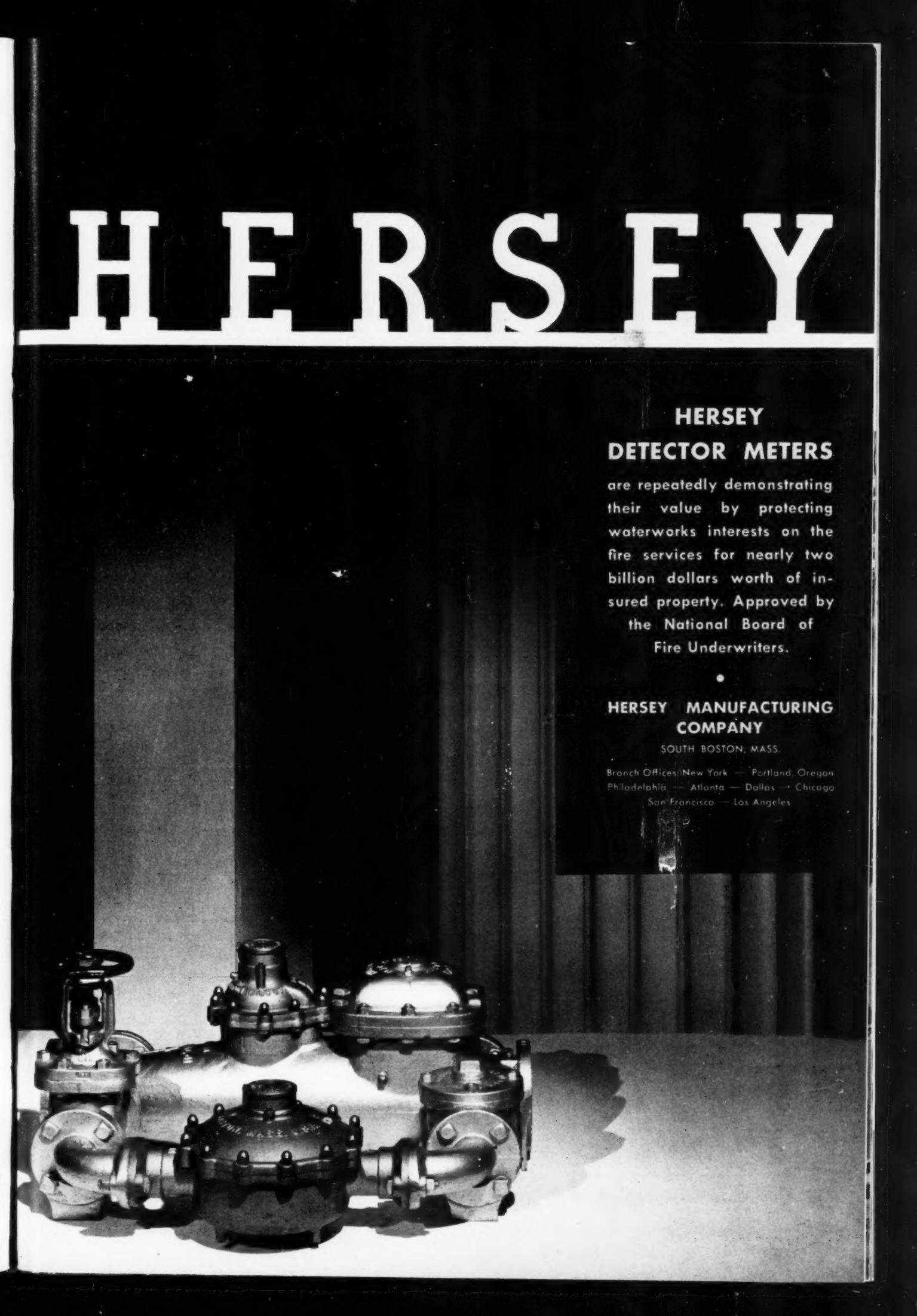
40 RECTOR STREET, NEW YORK 6, N. Y.

*Sales and Technical Service Offices:* Atlanta • Baltimore • Boston • Bridgeport (Conn.) Buffalo • Charlotte (N. C.) • Chicago • Cleveland • Denver • Detroit • Houston Kansas City • Los Angeles • Minneapolis • New York • Philadelphia • Pittsburgh Providence (R. I.) • San Francisco • Seattle • St. Louis • Utica (N. Y.) • Wenatchee & Yakima (Wash.)

In Wisconsin: General Chemical Wisconsin Corporation, Milwaukee, Wis.

**In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver**

# HERSEY



## HERSEY DETECTOR METERS

are repeatedly demonstrating their value by protecting waterworks interests on the fire services for nearly two billion dollars worth of insured property. Approved by the National Board of Fire Underwriters.

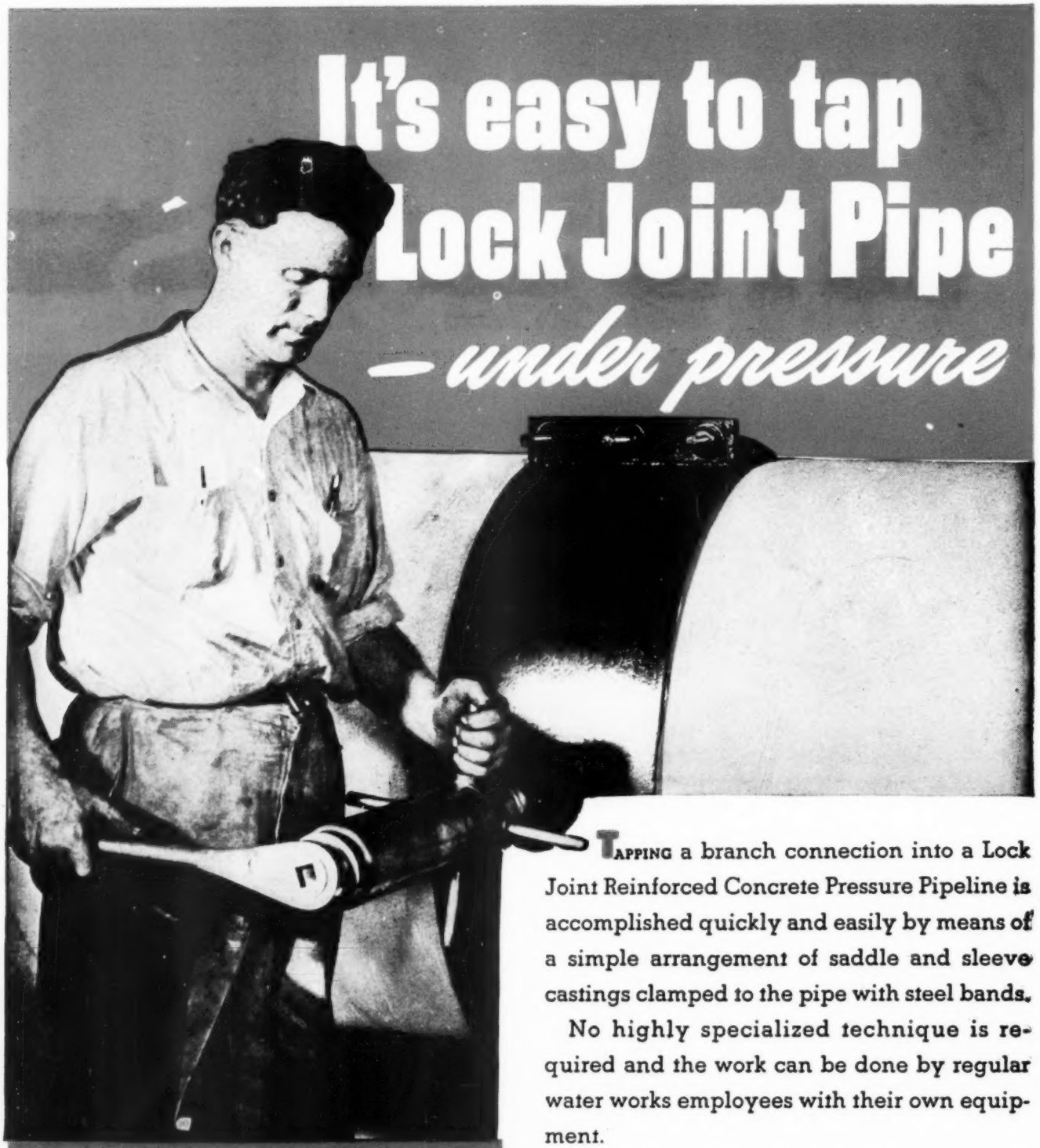
•

**HERSEY MANUFACTURING COMPANY**

SOUTH BOSTON, MASS.

Branch Offices: New York — Portland, Oregon
Philadelphia — Atlanta — Dallas — Chicago
San Francisco — Los Angeles

# It's easy to tap Lock Joint Pipe *— under pressure*



**LOCK JOINT**
*Reinforced Concrete*
**PRESSURE PIPE**

TAPPING a branch connection into a Lock Joint Reinforced Concrete Pressure Pipeline is accomplished quickly and easily by means of a simple arrangement of saddle and sleeve castings clamped to the pipe with steel bands.

No highly specialized technique is required and the work can be done by regular water works employees with their own equipment.

For further information on making connections under pressure to existing Reinforced Concrete Pressure Pipelines, you'll find the Lock Joint Pipe Company at your service.

**LOCK JOINT PIPE COMPANY**
*Established 1905*
**P. O. BOX 269, EAST ORANGE, N. J.**
Denver, Colo. • Chicago, Ill. • Kenilworth, N. J. • Kansas City, Mo. • Rock Island, Ill.
Joplin, Mo. • Valley Park, Mo. • Cleveland, Ohio • Hartford, Conn. • Navarre, Ohio

**SCOPE OF SERVICES** *Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply Mains as well as Concrete Pipe of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous lines.*

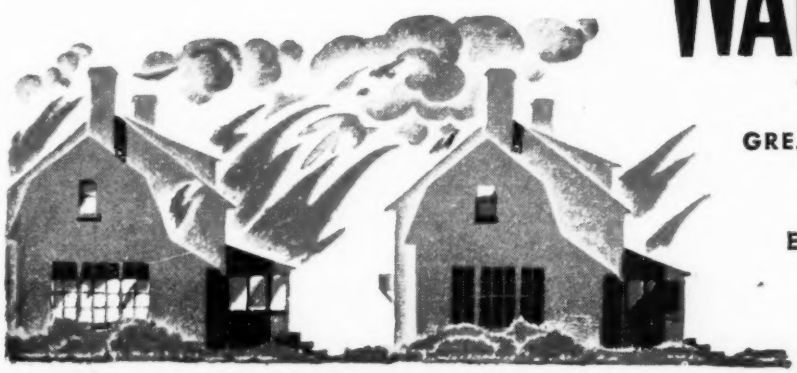
# "QUICK BURNERS"

# REQUIRE QUICK ACTION

Every other minute of the day and night, a residence catches fire in the United States. This, in itself, is startling. But sometimes the original fire jumps to adjoining houses and quickly reaches tremendous proportions.

No city is free from this ever-present threat and in order to combat such outbreaks efficiently, the fire-fighting apparatus must be of the best. Slow and unweildy trucks mean costly delay in answering an alarm when every minute counts.

Ward LaFrance trucks are in great demand by fire departments . . . because of their exceptional maneuverability and dependability. Also, the powerful 6 cylinder engine assures speed and plenty of reserve power. If you are planning the purchase of new apparatus, consider the many advanced features offered in a Ward LaFrance . . . Descriptive literature will be sent upon request.



**WARD LAFRANCE**

**TRUCK DIVISION**

**GREAT AMERICAN INDUSTRIES, INC.**

**ELMIRA, NEW YORK**

# *Adaptability* TO GENERAL MUNICIPAL REQUIREMENTS

*The Captain George dredge, equipped with a Morris 12" Heavy Duty Dredge Pump.*

## This MORRIS HYDRAULIC CUTTER DREDGE

### Has Demonstrated its Utility on Three Locations Handling Three Different Deposits

**1.** (Near Chicago) Production of heavy sand and gravel, delivering through approximately 1500′ of 12″ discharge line against a 30′ static discharge head. Used until deposit was exhausted.

**2.** (Mississippi River) Dredging for locks and dams. Used until work was completed.

**3.** (Alberta Lea, Minn.) A lake improvement project, moving 500,000 cu. yds. of mud, clay, sand and gravel through 12″ discharge lines up to 3500′ in length. Used for seven months.

**4.** (Portland, Ore.) Now being set up for its fourth job.

Assembled, dismantled and moved overland three times—for dredging jobs on three difficult deposits—the *Captain George*, a Morris 12-inch Portable Hydraulic Cutter Dredge has proved its versatility and mobility. Morris Dredges are engineered to attain two objectives:

1. **MAXIMUM OUTPUT by impelling the maximum amount of solids through the pump at a uniform rate.**
2. **MAXIMUM LIFE through rugged construction, accurate machining and interchangeable wearing parts.**

Morris cutters and pumps work in synchronous efficiency; and the operating gear, designed for flexibility and ease in manipulation, is reduced to the simplest practicable mechanics. The *Captain George* exemplifies a dredge that will cope with the most stubborn deposits—it is the dredge best adapted to reservoir cleaning, filling low lands, draining low areas, park beautification and general postwar municipal projects.

***Write for Special Bulletin 177 giving descriptions, specifications, and recommendations on hydraulic dredging plants.***

## MORRIS MACHINE WORKS

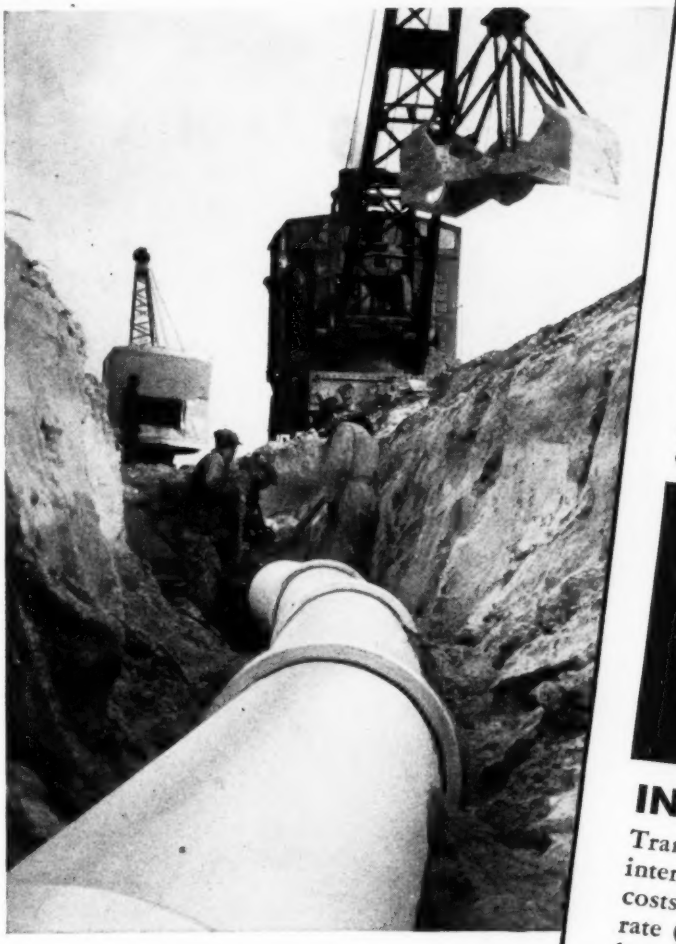
**Baldwinsville, N. Y.**

*Branch Offices in Principal Cities*

MORRIS

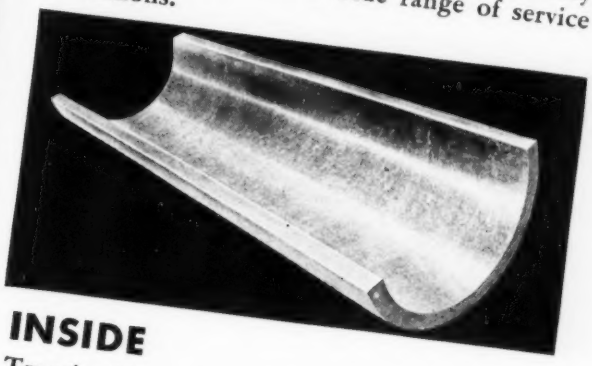
## CENTRIFUGAL PUMPS

# IT RESISTS CORROSION



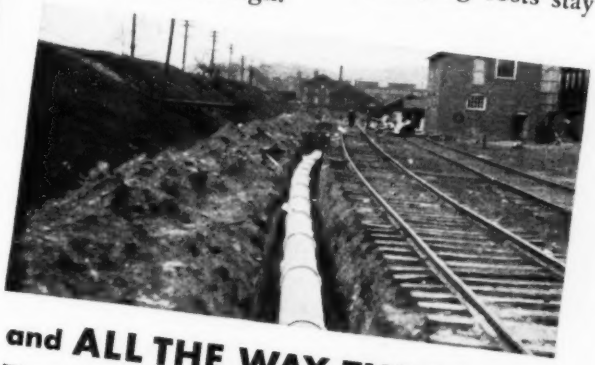
## OUTSIDE

Transite Pipe is stubbornly resistant to soil corrosion. Thousands of successful installations, many of them in highly corrosive soils, testify to its stability under a wide range of service conditions.



## INSIDE

Transite Pipe cannot tuberculate. This costly internal corrosion that increases maintenance costs can never choke off its initial high flow rate (C=140). As a result, pumping costs stay low, pressures high.



## and ALL THE WAY THROUGH

Transite Pipe resists destructive attack. Made of asbestos and cement bonded together under great pressure, its ability to provide efficient, economical water transportation has been proved in thousands of installations.

**EASY HANDLING** is an additional advantage of Transite Pipe. Its light weight means more footage carried per truck load, fewer men required for handling, lower transportation costs. And in the trench, the Simplex Coupling assures quick, easy assembly, even with inexperienced crews.

For full details, write Johns-Manville, 22 East 40th Street, New York 16, N. Y.

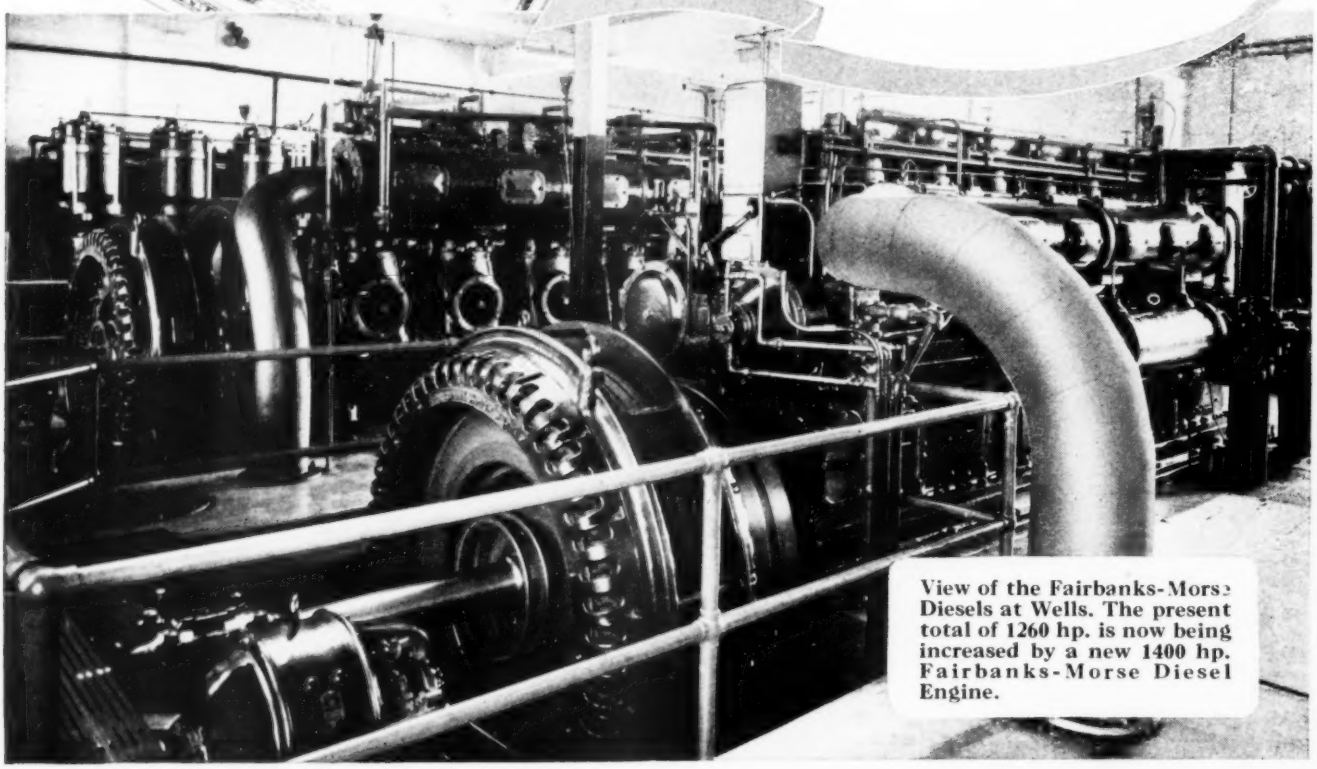
JOHNS-MANVILLE JM PRODUCTS

**Johns-Manville TRANSITE PIPE**

**FOR EFFICIENT, ECONOMICAL WATER TRANSPORTATION**

# DIESELS

## Buy War Bonds for Wells, Minn.



View of the Fairbanks-Morse Diesels at Wells. The present total of 1260 hp. is now being increased by a new 1400 hp. Fairbanks-Morse Diesel Engine.

FOUR Fairbanks-Morse Diesels serving Wells, Minnesota, have been such a good investment that the city is now installing a fifth and larger Fairbanks-Morse Diesel.

In 14 years of operation the Wells municipal power plant has paid for itself and bought the town $151,000 in War Bonds. In 1930 the per-kilowatt-hour cost was 2.35 cents; now it is 1.24. Fuel costs for more than two million kilowatt-hours are now what a half-million used to be. And $30,000 from the plant surplus has recently been transferred to the general operating budget of the town.

This is just one more example of how Fairbanks-Morse Diesels serve the light and power needs of communities today—and help bring citizens more of the benefits of modern living. Write for information. Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

BUY AND HOLD WAR BONDS

# Fairbanks-Morse

*A name worth remembering*

**Diesel Locomotives • Diesel Engines • Generators • Motors • Pumps • Scales**
**Magnetos • Stokers • Railroad Motor Cars and Standpipes • Farm Equipment**

# Heavy-Duty Autocar-Diesels!

*A limited quantity of new, heavy-duty Autocar Trucks are now being built by Government authorization. A fortunate few haulers of essential loads can get them. Maybe you can qualify.*

Superbly engineered and precision-built *by Autocar,* Autocar-Diesels cost more *because they're worth more.* No one knows this better than Associated Lumber and Box Company, one of the leading producers of special lumber in the United States. They rely on these famous, heavy-duty trucks to haul Ponderosa Pine and Sugar Pine in the Sierra-Nevadas. They know that heavy-duty Autocars do the rugged, brutal work they're built to do . . . profitably, economically, tirelessly.

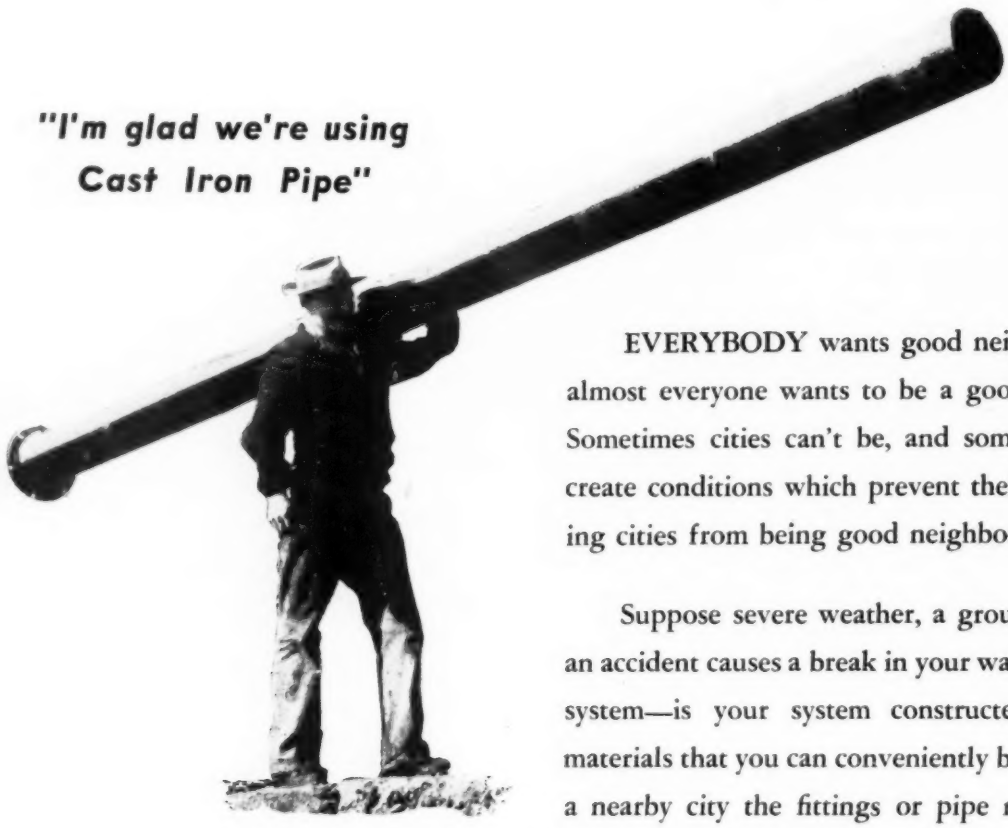
*Follow the leaders, for they know the way!*

## THE AUTOCAR COMPANY

**BIG PRODUCERS OF BIG DIESEL TRUCKS**

Manufactured in Ardmore, Pa. • Serviced by Factory Branches and Distributors from Coast to Coast

# Can Your City Be a "GOOD NEIGHBOR"?




EVERYBODY wants good neighbors, and almost everyone wants to be a good neighbor. Sometimes cities can't be, and sometimes they create conditions which prevent their neighboring cities from being good neighbors.

Suppose severe weather, a ground fault or an accident causes a break in your water or sewer system—is your system constructed of such materials that you can conveniently borrow from a nearby city the fittings or pipe necessary to make a quick repair? Or if the bad luck happens to hit the nearby city, can you accommodate it likewise?

You can if water, sewer and gas systems are built of Mono-Cast Centrifugal Pipe. Most municipal systems in the United States and elsewhere utilize cast iron pipe as a standard because of its long life and trouble-free qualities. Substitute pipe not only lacks these qualities, but leads to complications and delays when unexpected trouble develops.

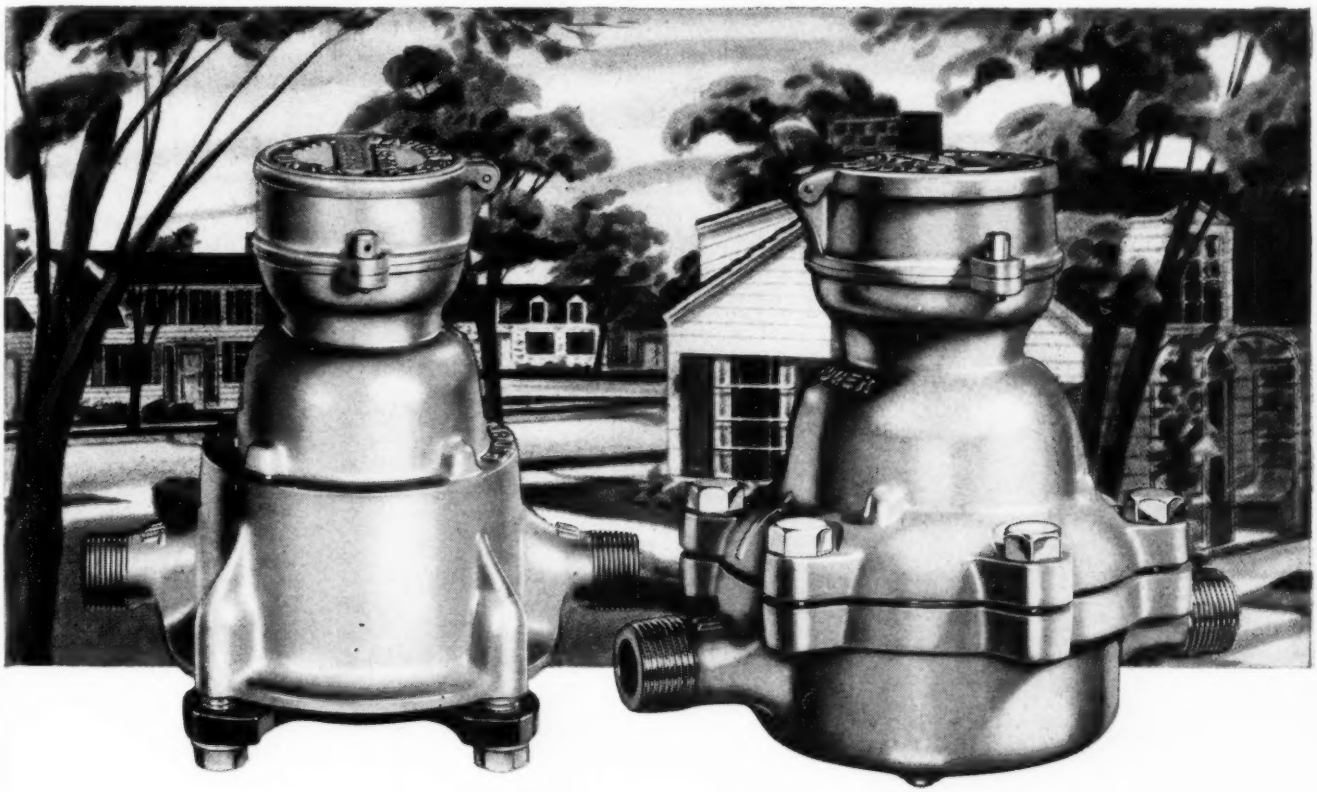
Experience has proven that cast iron pipe is most economical in the long run. Mono-Cast Centrifugal Pipe, available with a variety of joints, and cement lined when conditions require it, has proven to be exceptionally satisfactory.

## AMERICAN CAST IRON PIPE COMPANY

**Birmingham 2, Alabama**

Chicago • New York • Dallas • Cleveland • Pittsburgh • Houston • El Paso
Kansas City • Los Angeles • Minneapolis • San Francisco

# DURABILITY PLUS SUSTAINED ACCURACY FAR BEYOND NORMAL EXPECTANCY!



FOR forty years Badger has built water meters that faithfully measure every fractional cubic foot of water, from the smallest trickle to maximum capacity flow.

Today, under wartime stress, Badger Water Meters are helping water works men to serve their communities and Our Nation — and to maintain accurate metering at commendably low cost.

In your postwar planning, bear in mind Badger Meter's record for sustained accuracy and durability far beyond normal expectancy.

**BADGER METER MANUFACTURING CO., MILWAUKEE, WIS.**

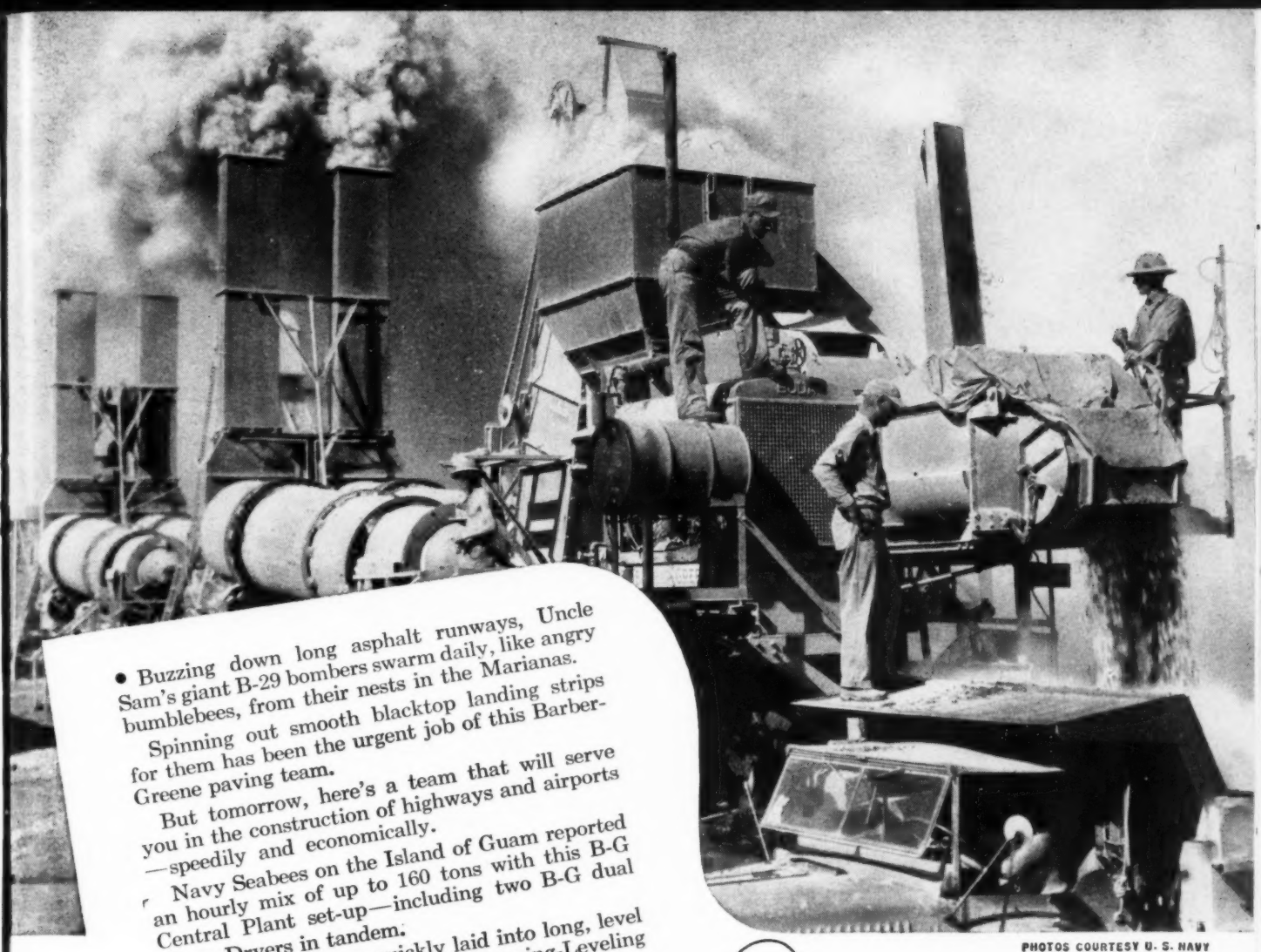
*Branch Offices in:* New York City • Chicago, Ill. • Waco, Texas • Portland, Ore. • Salt Lake City, Utah Seattle, Wash. • Cincinnati, Ohio • Kansas City, Mo. • Tampa, Fla. • Savannah, Ga. Los Angeles, Cal. • Philadelphia, Pa. • Denver, Colo. • Worcester, Mass.

# 7TH WAR LOAN

Our purchases of War Bonds backed our Armed Forces in the defeat of Germany.

We will back our Armed Forces in the defeat of Japan by purchasing **MORE** War Bonds.

INTERNATIONAL BUSINESS MACHINES CORPORATION



PHOTOS COURTESY U. S. NAVY

# THE B-G TEAM THAT BUILT A "B's" NEST

• Buzzing down long asphalt runways, Uncle Sam's giant B-29 bombers swarm daily, like angry bumblebees, from their nests in the Marianas.

Spinning out smooth blacktop landing strips for them has been the urgent job of this Barber-Greene paving team.

But tomorrow, here's a team that will serve you in the construction of highways and airports —speedily and economically.

Navy Seabees on the Island of Guam reported an hourly mix of up to 160 tons with this B-G Central Plant set-up—including two B-G dual Drum Dryers in tandem.

Mix produced was quickly laid into long, level taxiways with a modern B-G Tamping-Leveling Finisher.

When the time comes to begin the extensive highway and airport program, let Barber-Greene equipment help you. B-G equipment has established new standards in accuracy of proportioning and homogeneity of mix . . . has provided a method of putting down a firm, ripple-free mat efficiently. Moving and erection has been changed from a major project to a simple, low-cost maneuver. Barber-Greene Company, Aurora, Illinois.

45-6

**Barber B G Greene**

*Constant Flow Equipment*

# AQUA NUCHAR
## *going into Action*

Close to our fighting lines in many parts of the world, Aqua Nuchar Activated Carbon is functioning in the same way it operates in communities all over America . . . it is removing tastes and odors by *ad*sorption to make water more palatable.

As any G.I. will gladly tell you, there's lots of truth in the statement that an army marches on its stomach. Our fighting men deserve whatever respite and refreshment they can get from clear, palatable water. Consequently, after G.I. Joe moves up, Uncle Sam moves in stocks of Aqua Nuchar Activated Carbon to make sure that his drinking water is easy on the palate . . . water that may have been purposely contaminated by a retreating enemy.

When our armed forces employ Aqua Nuchar, they are using the same purification principle that waterworks officials all over America have endorsed for many years.

Fortunately, supplies of Aqua Nuchar are sufficient to make large shipments to our armed forces with plenty left over to supply the home front. Investigate Aqua Nuchar . . . Be sure that your waterworks engineers are using the activated carbon that makes possible the delivery of palatable water!

**BLUEPRINT NOW!**

**Remember that there is a war yet to be won.**
**Maintain equipment to operate at 100% efficiency.**

NUCHAR — INSURES PALATABLE DRINKING WATER

**INDUSTRIAL CHEMICAL SALES**

**DIVISION WEST VIRGINIA PULP AND PAPER COMPANY**

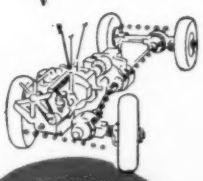
230 PARK AVENUE, NEW YORK 17, N.Y. · 35 E. WACKER DRIVE, CHICAGO 1, ILLINOIS · 748 PUBLIC LEDGER BLDG., PHILADELPHIA 6, PA. · 844 LEADER BLDG., CLEVELAND 14, OHIO

# FWDs MAKE THE MOST OF *Truck* POWER AND *Man* POWER

In everyday municipal trucking duty, FWDs regularly do scores of jobs . . . an interesting list, indicating the versatility of these trucks for all year 'round municipal work, is available on request. FWD trucks . . . rugged, reliable, modern in design, with features especially valuable in municipal service . . . embody the highest development of the original four-wheel-drive principle, pioneered and advanced by FWD since 1910 . . . the true FWD principle, with center differential and properly balanced power on all wheels, which provides outstanding mechanical advantages and performance, with power and stamina to get through, regardless of weather, road conditions, or lack of roads, with greater assurance and safety.

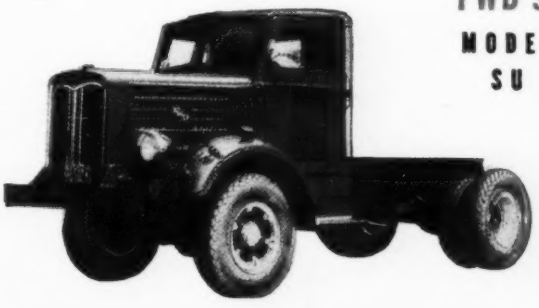
Balanced weight distribution on all four wheels conserves precious tires, replacements, oil and gas. As leaders in performance, economy and style, FWDs are a great "buy" for municipal service. Municipalities operating large fleets of them, including FWD Fire Trucks, are evidence of that fact.

**THE FOUR WHEEL DRIVE AUTO COMPANY, Clintonville, Wisconsin**
Canadian Factory: Kitchener, Ontario



FWD
TRUCKS
THE ORIGINAL EXCLUSIVE BUILDERS OF FOUR-WHEEL-DRIVE TRUCKS

More than $75,000,000 in purchases of FWD Model SU alone in the comparatively short span of forty-eight months, emphasizes FWD leadership in this field!



# This is your

# POST-WAR PARKING METER

HOURS OF OPERATION-8 A.M. 6 P.M. DAILY
EXCEPT SUNDAYS & HOLIDAYS
INSERT COIN
HERE
1 FOR 12 MIN.
5 FOR 1 HOUR
OVER TIME
0 10 20 30 40 50 60
THIS CAR
REG US PATENT NO 2359754
INTERNATIONAL METERS INC NEW YORK USA

**ONE METER WHICH PARKS TWO CARS—The result of years of experience in the industry.**

- Saves your city about half the cost of other good meters.
- Saves about half the maintenance costs.
- Saves half the time for collections.
- Eliminates half the posts on the sidewalks (see opposite page).
- Beautifies the city.

**PLURAL SPACE PARKING METER**

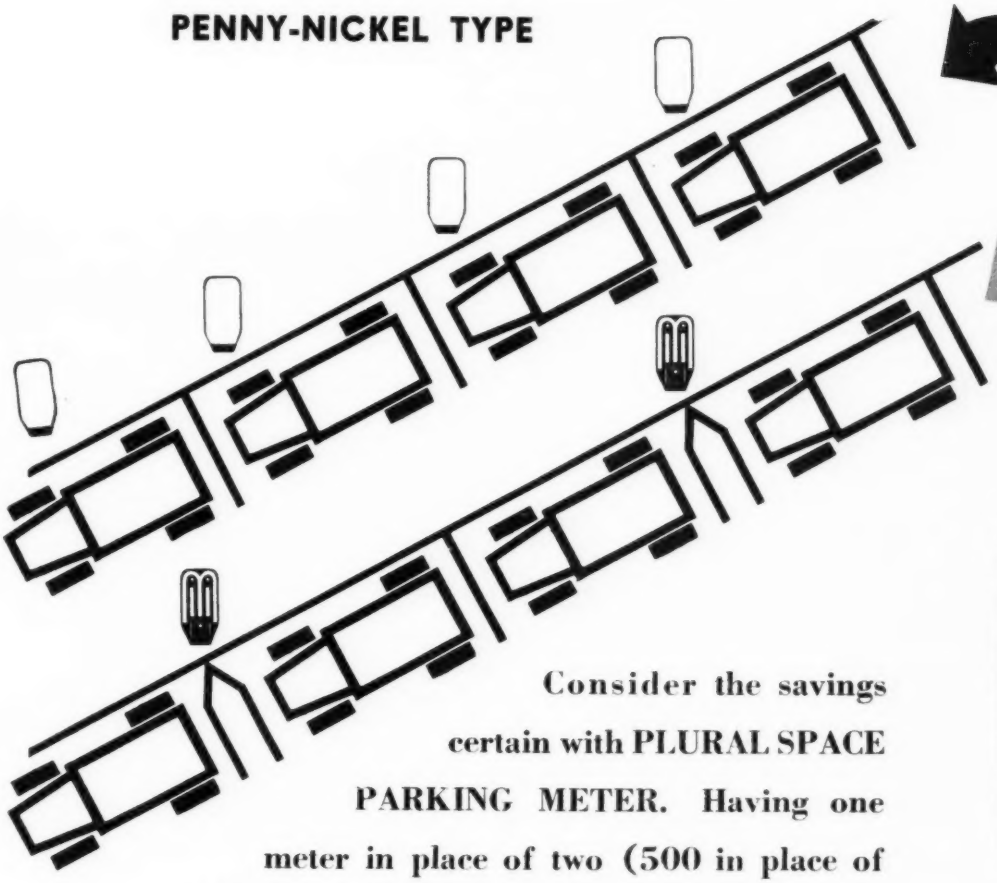
No larger than the average size parking meter.

Parks two adjoining cars independently of each other.

Patents issued October, 1944.

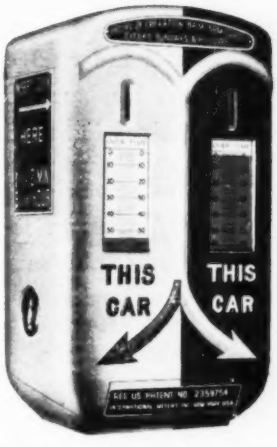
# IT'S AN AUTOMATIC

**PENNY-NICKEL TYPE**




Consider the savings certain with PLURAL SPACE PARKING METER. Having one meter in place of two (500 in place of 1,000) saves first cost of equipment, installation, cost of maintenance, policing, and collection of revenues. Also consider economy of sidewalk space and reduction of fire hazard. Remember: *One casing, one mechanism* on *one stanchion controlling two cars.* In your postwar traffic and parking plans, please consider this newest of meters. The PLURAL SPACE PARKING METER spells PROGRESS—The American Creed.

*Write for detailed information.*




**The above heads show several positions of the two flags which operated entirely independently of each other. A penny or a nickel dropped in either slot will provide 12 minutes or 60 minutes.**

# INTERNATIONAL METERS, INC.

**41 East 42nd Street** **Phone: MUrray Hill 2-5236** **New York 17, N. Y.**

TRADE MARK

FIRE ALARM GAMEWELL POLICE

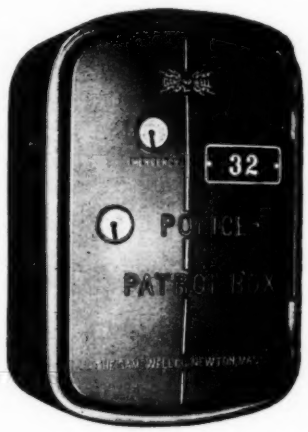
REG. U. S. PAT. OFF.

# MUNICIPAL SIGNALING SYSTEMS

THE GAMEWELL COMPANY, since 1866, has specialized in the design, manufacture, engineering and installation of Municipal fire alarm and police signaling systems.

STANDARD
MUNICIPAL FIRE ALARM BOX
THREE-FOLD TYPE

Gamewell systems are now in service in all parts of the world, protecting more than 2000 municipalities, many of the largest industrial and institutional establishments, and since the outbreak of war more than 500 systems have been supplied to protect properties of the Allied Nations.




STANDARD
MUNICIPAL POLICE BOX

Time is the vital element when fire occurs — a few seconds may mean the difference between a nominal loss and a conflagration.

The most efficient fire department is helpless until the alarm is given and prompt use of the box is the most certain method of reducing the fire loss.

***You can help*** by urging the installation of a box at every fire hazard — the box saves time.

The police box contributes to the prevention of crime and to the discovery of fire — and consequently to decreased property losses. More than 50% of all fires occur at night and are frequently discovered by patrolmen.

Effective police patrol discourages criminals and decreases the fire hazard — the police box ensures adequate patrol.

***You can help*** by urging adequate police supervision and the recorded performance of police duty.

**DELAYED ALARMS COST MILLIONS ANNUALLY**

*Individual problems given special attention — no obligation*

## THE GAMEWELL COMPANY

NEWTON UPPER FALLS 64, MASSACHUSETTS

1 Qt.

***S-O-S Fire Guard*** *vaporizing liquid extinguisher (above) is Underwriters' approved for use on electrical, chemical, gasoline, and paint fires. One quart or 1½ qt. size.*

*FREE: Norman Rockwell illustrated calendar featuring Great Chicago Fire. Write for your copy.*

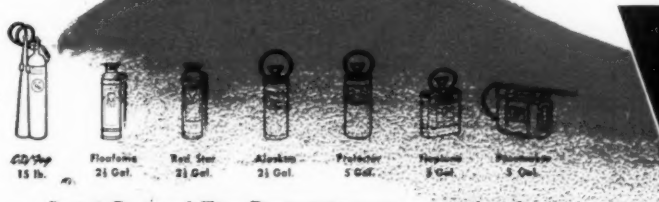
Would you use a bus for bricks? A panel truck for gravel? Not likely. Every vehicle has its own job.

And every fire extinguisher also has its own job. Gasoline and oil fires, for example, call for an entirely different extinguisher than textile and rubbish fires.

Stationed near you is a trained Fire Protectioneer able to advise you on the correct equipment for your every fire hazard. Backing him is this 40-year-old concern, manufacturing a *complete line* of Underwriters' approved fire extinguishers. There is no charge for this service.

Call your distributor or write direct.

IF IT'S
GENERAL
IT'S DEPENDABLE




Let a General Fire Protectioneer prescribe the *right* extinguisher for your every fire hazard.

THE GENERAL DETROIT CORP.
2270 E. JEFFERSON AVE., DETROIT 7, MICH.
*Distributors in principal cities*
CHICAGO DALLAS NEW YORK
West Coast Affiliate: The General Pacific Corp.
Seattle • LOS ANGELES • San Francisco

"LOCK-LID" STREET WASHERS 3/4" and 1" SIZES

# MURDOCK

A RELIABLE NAME ON OUTDOOR WATER SERVICE DEVICES

Since 1853

"Air-Lock" ANTI-FREEZING OUTDOOR DRINKING FOUNTAIN

LARGE ANTI-FREEZING HYDRANTS 1½" TO 2" INCLUSIVE

SELF-CLOSING ANTI-FREEZING HYDRANT

ANTI-FREEZING COMPRESSION HYDRANT

**THEY DON'T HAVE TO BE DUG UP**

There's so little wear and tear to MURDOCK Outdoor Water Service Devices that they hardly ever need attention—only an occasional replacement of a washer.

But when repairs are needed, anticipate an easy job because the fixtures do not have to be dug up—the working parts lift right out of casing.

Minimum man-hours-labor making repairs emphasize "It Pays to Buy MURDOCK."

**The Murdock Mfg. & Sup. Co.**
426 Plum St. Cincinnati 2, Ohio

**"IT PAYS TO BUY MURDOCK"**

# YOUR AIRPORT

*. . . whether it be a way-station or a terminal on the HIGHWAYS OF THE AIR, requires radio facilities especially designed for the services you offer. Without adequate radio equipment your airport cannot perform its proper function.*

**DESIGN:** Fortified by years of experience in designing airway and airport radio equipment, RADIO RECEPTOR engineers offer you a vast store of specialized knowledge.

**MANUFACTURE:** Civilian radio equipment manufactured by RADIO RECEPTOR meets the same high standards as set for CAA and the Armed Forces, and will be produced by the same personnel.

**PLAN:** Send for your Airport Radio Questionnaire, and let us help you plan adequate radio equipment for your airport . . . NOW!

Non-technical booklet, "HIGHWAYS OF THE AIR," available on request. Address Desk AC-6

*We invite an opportunity to cooperate with Engineers, Consultants and Local Contractors.*

**RADIO RECEPTOR CO., INC.**

**251 WEST 19th STREET NEW YORK 11, N. Y.**

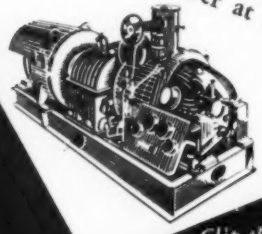
*Engineers and Manufacturers of Airway and Airport Radio Equipment*

**SINCE 1922 IN RADIO AND ELECTRONICS**



## Cut your power costs with Hendy Turbo-Generators...

The Hendy Turbo-Generator is designed to meet your most exacting power requirements, from 250 kw up. The coupon below will bring you complete information, explaining how the Hendy Turbo-Generator, geared or direct drive, is specifically designed and built to operate as a matched unit, providing reliable power at *low* cost.



*Clip this coupon, mail it today!*

Please send me your 2-color illustrated booklet describing the *new* Hendy Turbo-Generators.

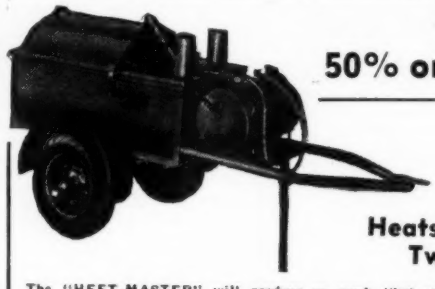
*Name*_____

*Company*_____ *Position*_____

*City*_____ *Zone*____ *State*_____

JOSHUA **HENDY** IRON WORKS
ESTABLISHED 1856
SUNNYVALE, CALIFORNIA





**Saves 50% on Time & Fuel**

**The Aeroil HEET-MASTER**

**Heats Tar & Asphalt Twice As Fast**

The "HEET-MASTER" will produce as much "hot stuff" as two ordinary type oil-burning kettles of the same capacity. Now obtainable on pneumatics. (Also mud guards at slight extra cost.) Send for FREE Bulletin No. 260AC. For Cut-Back and Emulsion Sprayers, Bulletin No. 190A. Oil-burning Lead and Pipe Compound Melting Furnaces, Bulletin No. 232AC. Portable Oil Burner & Torch Outfits, Bulletin 174A. Asphalt Paving Tools & Accessories, Bulletin 312A. Asphalt Paving Tool Heaters and Asphalt Pavement Heaters, Leaflet 171A.

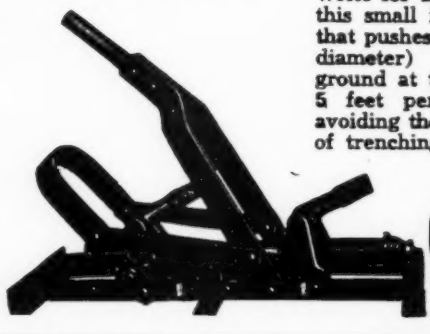
**Aeroil Products Co.** West New York, N. J.

CHICAGO 16 SAN FRANCISCO 7 DALLAS 1



# GIANT

***Reduce Pipe-Laying Costs with a GIANT Pipe Pusher***



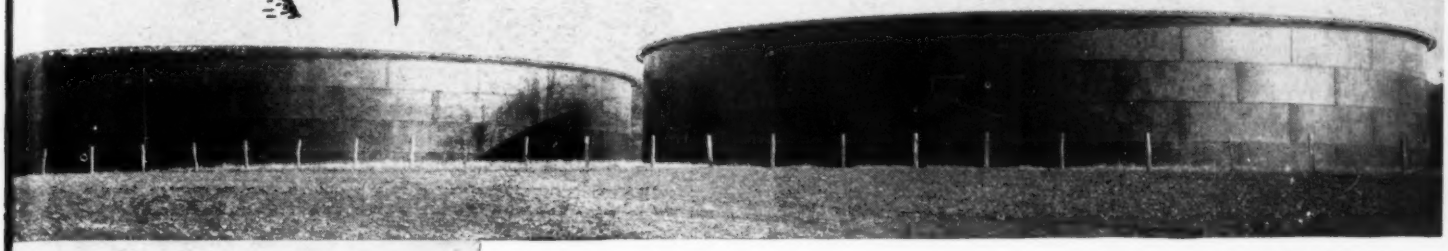
**Write for booklet telling of this small inexpensive tool that pushes pipe (up to 15" diameter) through the ground at the rate of 1 to 5 feet per minute, thus avoiding the heavy expense of trenching.**

**Address Dept. P**

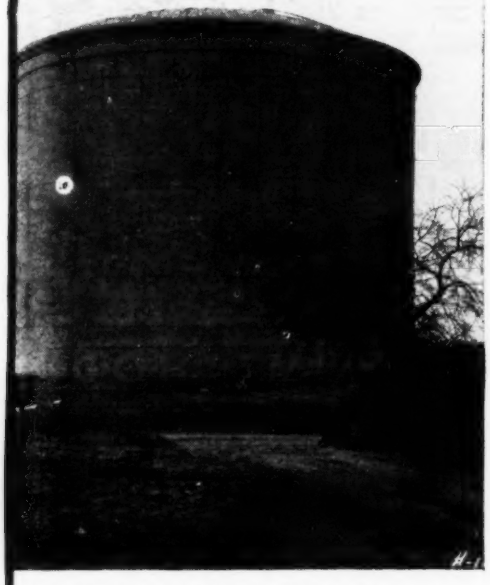
**GIANT MFG. CO.**
**Council Bluffs, Ia.**

*For*

- LIFETIME PERMANENCE
- LOW FIRST COST
- LOW MAINTENANCE COST
- GUARANTEED SATISFACTION



Berryville, Va.—Two 3,000,000-gallon P·DM Steel Reservoirs

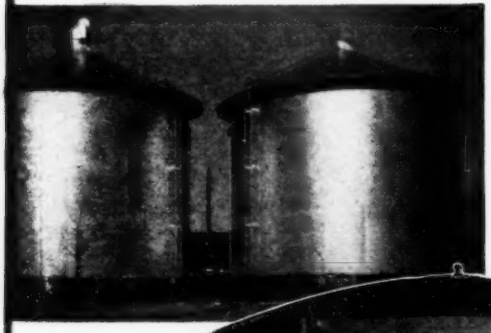


*Specify*

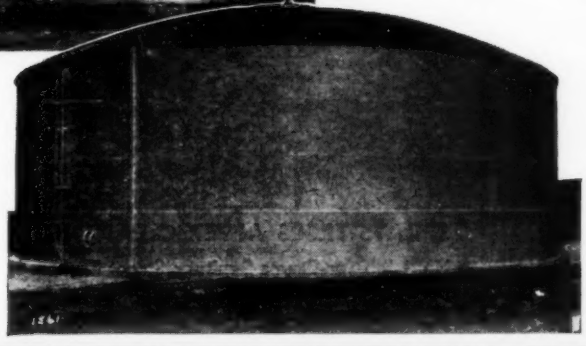
# Steel Reservoirs

## by PITTSBURGH · DES MOINES

ol Heights, Md.—1,500,000-gallon P DM Steel Reservoir



tic, Iowa—Two 00-gallon P·DM eservoirs



ttineau, N. D.— 00,000-gallon DM Steel Reservoir

In planning for water storage by reservoir, where supply and topographic conditions are favorable, be sure to combine the natural advantages and economies of this type of storage with the outstanding benefits of *steel* reservoir construction. Pittsburgh-Des Moines Steel Reservoirs are permanently strong and watertight—unaffected by weather or seasonal change—can be erected at any time of year—require only an infrequent coat of paint to retain new appearance, and are lower in first cost than other construction types. With a definite, responsible guarantee of satisfaction, P·DM Steel Reservoirs end your water storage problems upon installation—and *keep* them solved! *Write for descriptive Bulletin 102. Consultations gladly arranged on request.*

**PITTSBURGH · DES MOINES STEEL CO.**

PITTSBURGH, PA., 3412 NEVILLE ISLAND—DES MOINES, IOWA, 913 TUTTLE STREET

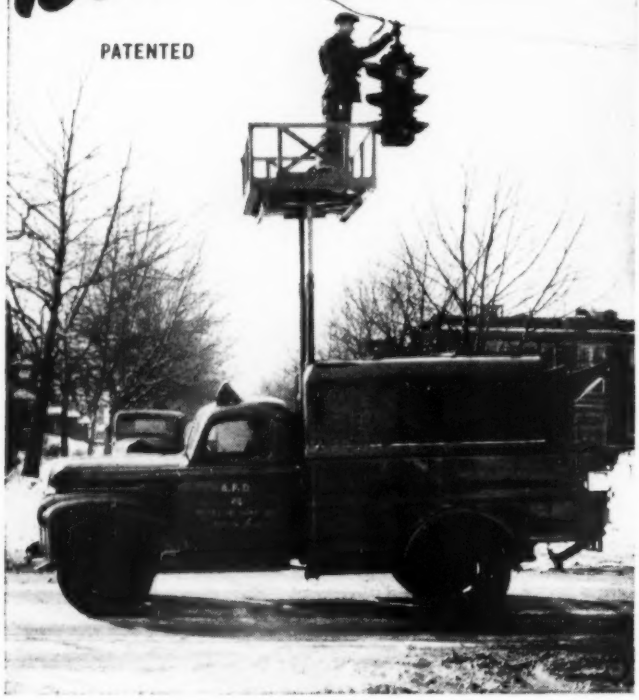
NEW YORK, ROOM 917, 270 BROADWAY · CHICAGO, 1216 FIRST NATIONAL BANK BUILDING

DALLAS, 1217 PRAETORIAN BUILDING · SAN FRANCISCO, 619 RIALTO BUILDING

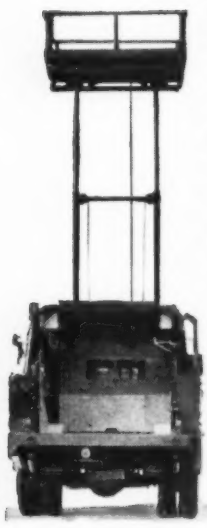
SEATTLE, 520 EIGHTH AVENUE, SOUTH

# Bird-White TOWERS

PATENTED



## The Modern Way To Service Municipal Lighting



Simplicity of design, sound engineering and unique construction make the new Bird-White Tower Lifts the last word for all overhead work. They *save time and money* on all signal maintenance, street lighting, tree trimming and heavy line work.

Combining lower initial height, with extreme elevations up to 28 feet, they have all the advantages of heavier, more costly tower lift equipment without the high initial or maintenance cost. Raising and lowering is controlled from lift platform operated by twin hydraulic telescopic rams. Collapsible guard rails provide maximum safety to the operator. A remarkable new jack, offered as optional equipment, eliminates sidesway when tower is raised to extreme elevations.

Bird-White Towers can be adapted to all streamlined or open back utility trucks. Our engineers will welcome an opportunity to design a tower to meet your requirements for either new or old equipment.

*Write for Tower Lift Bulletin Today*

**BIRD-WHITE COMPANY**

DEPT. AC, 3119 West Lake Street, Chicago 12, Ill.

## CUT MAINTENANCE COSTS 75%

Concrete slab maintenance costs can be reduced as much as 75% by the Koehring Mud-Jack Method. The Mud-Jack raises sunken concrete walks, curbs and gutters, driveways, streets, and airport runways eliminating reconstruction costs. Write for the new Mud-Jack Bulletin which is both illustrative and descriptive.

KOEHRING HEAVY DUTY

**KOEHRING COMPANY,**
**Milwaukee, Wisconsin (10)**

**MUD-JACK METHOD**

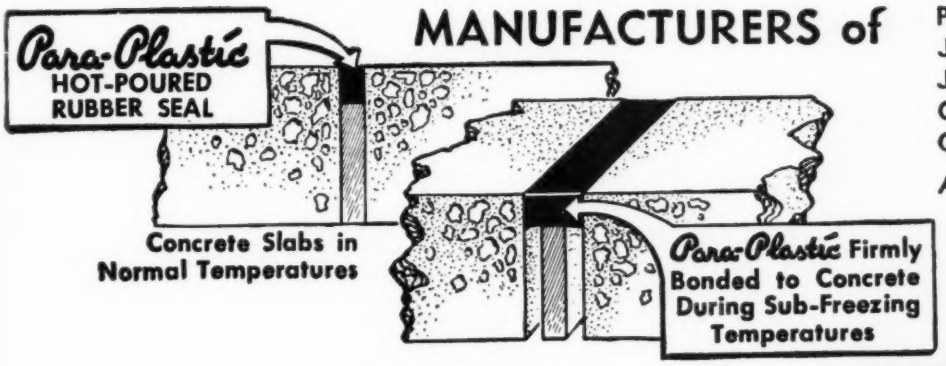


# ETNYRE
## Street Flushers
**"THE MACHINE OF A DOZEN USES"**

**SPRAYS TREES AFTER CLEANING STREETS!**

No. 1 job for Etnyre Sanitary Street Flushers is cleaning streets—up to 42 feet wide in ONE TRIP... irrespective of parked cars! Never "off duty," Etnyre Flushers have proved equally efficient for spraying trees, watering shrubbery, fighting fires, many other jobs. See your nearby Etnyre dealer for complete data or write us today.

**E. D. ETNYRE & CO., Oregon, Illinois**




MANUFACTURERS of

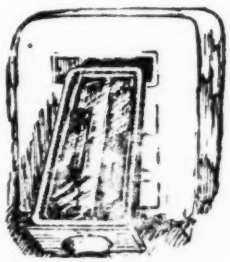
PREMOULDED EXPANSION JOINTS; FELT-SIDED ASPHALT JOINTS; SELF-EXPANDING CORK JOINTS; FELT SIDED AND CORK JOINTS; FIBER JOINTS...

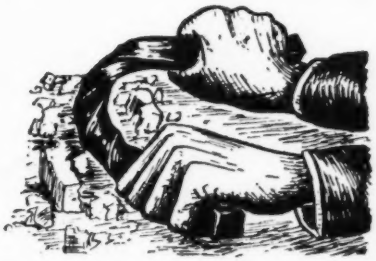
ASPHALT PLANK for— INDUSTRIAL FLOORING; BRIDGES AND BY-PASSES, RAILROAD TRACK FILLER, ETC.; ETC.; ETC.

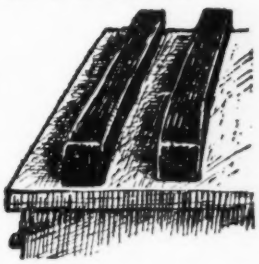
— Para-Plastic —
EXPANSION JOINT SEAL
EXTENDABLE—MAINTAINS
BOND at O° F.

HIGHWAY DRIVING IS A REAL PLEASURE ON CONCRETE ROADS

MADE SAFE and SMOOTH with Para-Plastic EXPANSION JOINTS

1. 

2. 

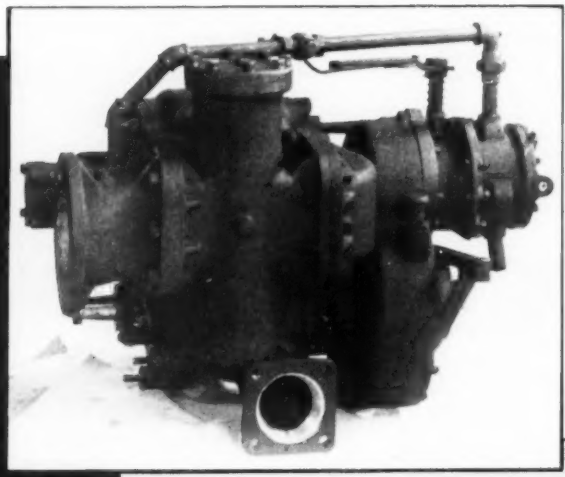
3. 

THREE TESTS: PROVING PLIABILITY OF Para-Plastic IN COLD WEATHER

SERVICISED QUALITY PRODUCTS © 1930

1 — PARA-PLASTIC Compound Frozen in Solid ICE.
2 — Still PLIABLE, easily BENT or TWISTED.
3 — In few Minutes—RESUMES Normal SHAPE.

SERVICISED PRODUCTS CORP.
6051 West 65th Street, Chicago, Ill.



★ ★ ★ ★ ★

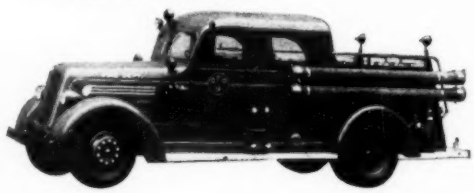
THE SEAGRAVE

# CENTRIFUGAL PUMP

**. . . Powerful, Dependable, Simple In Construction . . .**

The long life of the Seagrave Centrifugal is a proven fact. . . . Many have been in service for twenty-five years and more. Made by Seagrave for Seagrave Fire Apparatus.

**THE SEAGRAVE CORPORATION**
**Columbus, Ohio**
**Bickle-Seagrave, Ltd.,**
**Woodstock, Ont.**



*Seagrave*

**THE GREATEST NAME IN FIRE APPARATUS**

★ ★ ★ ★

**CONNERY'S**
**HEATING KETTLE**
***Style B-2***

***reduces street maintenance costs by heating tar and asphalt with SPEED AND SAFETY.***

This oil burning kettle is equipped with steel roller-bearing wheels. Sizes: 30, 80, 110 and 165 gallons.

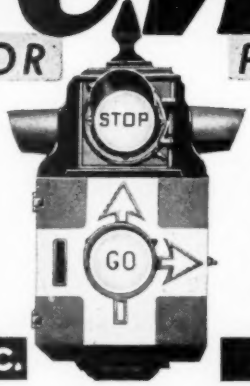
Write for catalog showing our full line of tar and asphalt heating kettles, spraying attachments, pouring pots, etc.

**Connery Construction Co.** 2nd & Luzerne Streets, Philadelphia 40, Pa.

# AROWAY

**TRAFFIC SIGNALS FOR POST-WAR DEMANDS**

Aroway will lead the way in post-war Traffic Signals because they are the simplest, clearest and most practical to avoid traffic snarls and costly accidents. The great hazards of traffic demand more than the old-fashioned Stop and Go Signals. The modern Aroway Signal is all-encompassing. It eliminates auxiliary signs like No Left Turn; No U Turn;

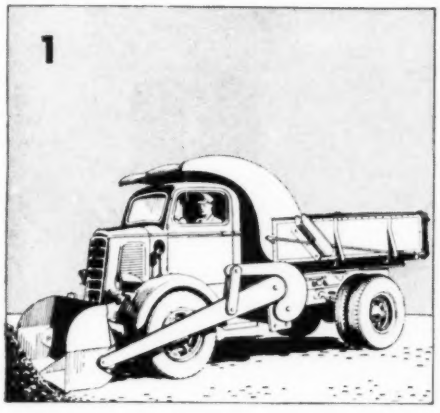



Straight Ahead, etc. Aroway Signals are complete at one focal point: *at the Stop and Go lights* and even those who cannot read or discern color will see the open and closed traffic lanes at a glance.

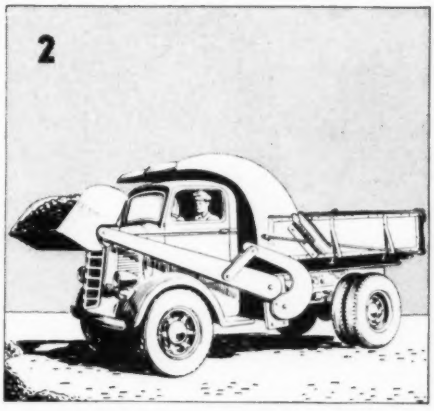
The demand for Aroway Traffic Signals for post-war demand will be tremendous. So get preliminary data now. Write to:

**AROWAY TRAFFIC SIGNALS, INC.** **JOHNSON CITY, TENNESSEE**

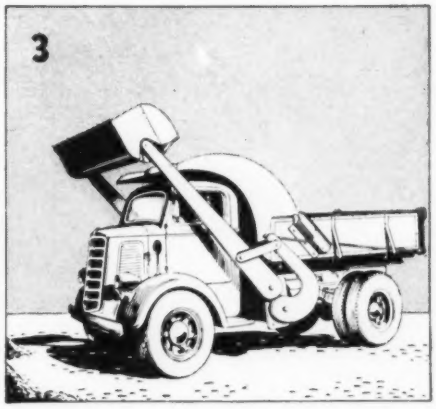
# One Man Moves a Mountain! by Jumbo



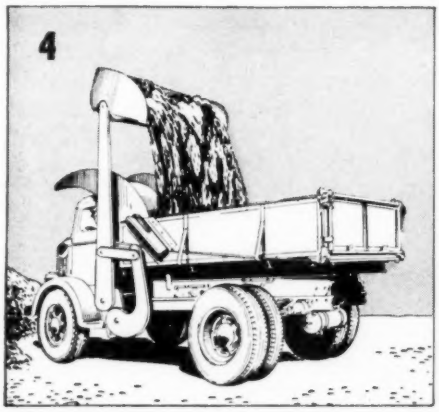

Shovel noses into a pile of loose material



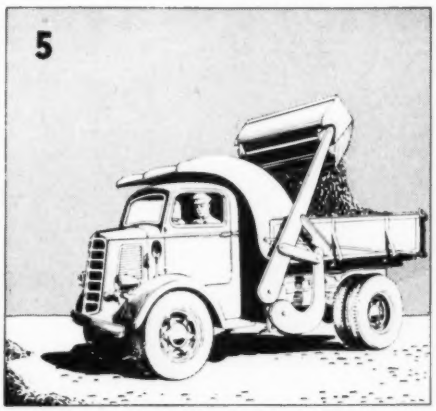

Hydraulic operation picks up a shovel-full



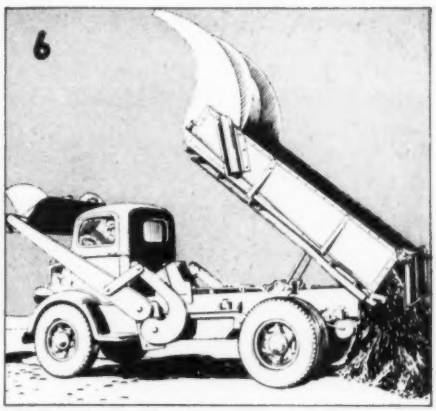

There's a cubic yard of material in shovel




Operator can see the material unloading




Material is distributed evenly in body..




..and the load is dumped, truck returns for more

## *Only 6 Seconds* TO LOAD EACH SHOVEL FULL!

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## TRUCK LOADER

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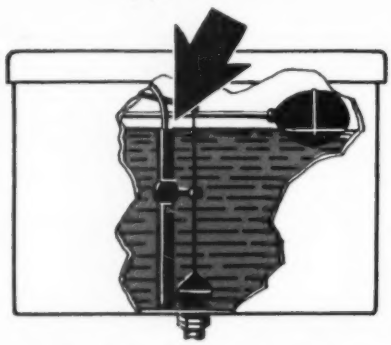
# Why meters should register at 1/4 gallon per minute 90%

## The Biggest Offender



THE overflow pipe, often silent and unsuspected, has been found by experience to be one of the largest wasters of water. Running steadily, at low rates of flow, its leakage will not be registered on meters which are not maintained in good condition. If the meter will not operate on ¼ of a gallon a minute, not an unusual leakage rate, over 10,000 gallons per month will go unaccounted and uncharged for.

OF unaccounted-for water, possibly more can be attributed to under-registration of meters than to any other single cause.

This may be easily understood from the results of a survey in a city where meters were not removed from service until they became inoperative. From a typical residential street, 40 meters were removed . . . 36 of which would not even move on a flow of ¼ gallon per minute.

When you remember that 13% of all water passing through 5/8" meters is used at about ¼ gallon per minute, you can readily see the importance of having your repaired meters register at least 90% at that rate of flow.

*Your Trident representative will be glad to give you the benefit of his experience in connection with modern meter shop operation.*

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*Vol. LX, No. 6* **The American City** *June, 1945*

# Mobile's Wartime Struggle for Water

***Mobile has been and is solving its water supply problem caused by swollen demand and acute poverty of materials***

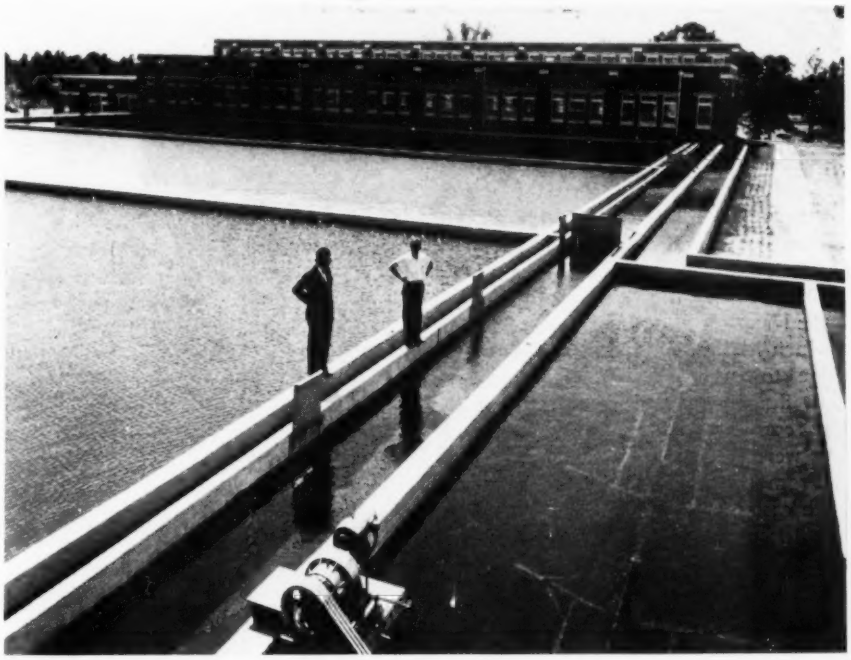
By H. E. MYERS
J. B. Converse & Co.
Consulting Engineers, Mobile, Ala.

THIS is a story of supplying water to one of United States' most severely war-impacted populations. Mobile in the 1930's was a city renowned as a place of gracious living. Before the war leaders in the community, realizing its many advantages, were striving to attract industry and new people to settle here. The first real impetus to this expansion came when the government chose Mobile as the site for Brookley field as a peacetime depot for the air force. Mobile had arrived. Its advantages of location and climate were finally recognized and it was now on its way to becoming a place of importance.

Little did Mobile realize what this new found growth was to mean. The feeling that everything was rosy, however, was very short lived. With the approach of war its strategic location with respect to materials and other factors turned it almost overnight into a boom town. Mobile was like the parents who were pleasantly expecting the arrival of an heir only to find themselves with quintuplets. Here's what happened: its population rose from 115,000 in 1940 to 225,000 in in late 1942; the bus system which transported 8½ million persons in 1940, carried 38½ million in 1942; the three largest concerns employing 4,000 in 1940 had 63,000 employees in 1942.

The city government realistically faced the great multitude of problems and has done a magnificent job. The utilities too had a tremendous problem to keep up with expansion. The citizens did their part in making available every bit of space for housing war workers. The Federal Government and private capital constructed housing units for this great influx.

The problem of providing water to all these people was magnified both by the great shortage of materials, especially during the early stages, and by the fact that the work *had* to be performed rapidly.



*J. B. Converse, consulting engineer for Mobile's wartime water works expansion, inspects the coagulation basins, which are Infilco equipped.*

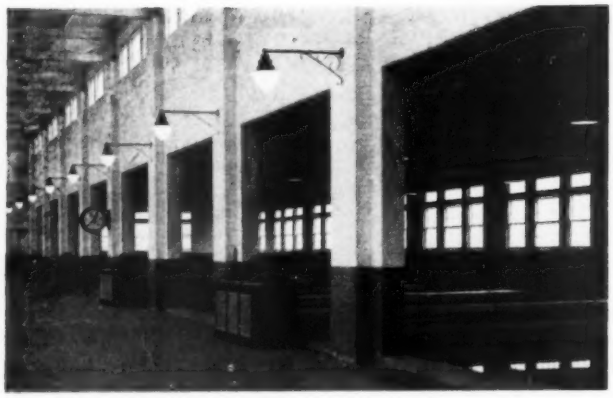
Prior to this the water works system consisted of two sources of supply each with a pumping station and a 10-mg reservoir and its own separate distribution system. The water was pumped from two creeks which have small impounding reservoirs, given a treatment of chlorine, and then distributed. Pumping was deferred during the rainy weather till the water cleared up or until demand made it necessary to resume pumping. The water consumption at that time averaged 9 mgd, whereas the combined minimum flow of the two creeks was approximately 13 mgd—a narrow margin on which to operate. To add to the problem, the possibility of pollution became a very present probability.

From these facts it was determined that a filter plant should be constructed; that additional supply was imperative due to the increased population; that new supply mains should be constructed; and the distribution system extended.

The city made application for priorities from the War Production Board and to the Federal Works Agency for funds. Permission was granted to construct a 20-mg filter plant, an auxiliary pumping station on Eight-Mile Creek, and to extend the distribution system to certain housing areas. Lanham Act funds also were made available. All other requests were turned down because of the scarcity of materials at that time. Later, however, permission was granted to construct the new main into town, a 20-mg raw water reservoir, and additional distribution lines. These projects were eventually completed at a cost of 2¼ million dollars.

The filter plant constructed was of the conventional coagulation and filtration type. The operation and highlights are as follows:

All raw water enters the reservoir which has a capacity of 20 mgd, comparable to the daily capacity of the



LEFT: *The plant's ten filter beds were furnished by the Roberts Filter Mfg. Co. and their operation is controlled by Roberts control plants.* RIGHT: *This construction picture of the 20-mg raw water reservoir shows the sloping sides. It was lined with 3-inch Gunite reinforced with 4 by 4 No. 4 mesh.*

filter plant. Here it is mixed and blended. The reservoir adjacent to the filter plant was constructed with rolled earth embankments. Its bottom dimensions are 325 feet square with side sloping 2:1 and it has a depth of 21 feet. The entire bottom and slopes are lined with 3-inch Gunite reinforced with 4 by 4, No. 4 mesh. The top of the embankment was paved with ordinary concrete and a 12-inch high curb installed at its outer edge to prevent overflow. An over flow flume and a drain line by which the reservoir may be drained for cleaning were provided.

From the raw water reservoir a 30-inch cast iron line was installed to the low lift pumping station which pumps raw water into the filter plant through two 24-inch cast iron lines. This station has one 14,000 and two 7,000 gpm Allis-Chalmers pumps.

The raw water enters the plant through a 30-inch Venturi Meter which records rate of delivery and indicates the total water delivered. Adjacent to this meter is a 24-inch hydraulically operated water level regulator which maintains a continuous steady flow of water into the rapid mix basins. This rate of flow is equal to the rate of filtration and therefore provides a constant water level.

The two rapid mix basins operated in series are 12 feet 6 inches square and 12 feet 3 inches deep. About 24 ppm of alum and 14 ppm of lime varying with the character of the raw water are fed into the basins at this point and mixed rapidly for two minutes.

The water passes into four primary coagulators each 14 feet by 56 feet by 12 feet 3 inches deep. These basins operate in parallel. Here the water and chemicals are mixed for approximately 20 minutes. The water then passes through a flume into the stilling compartment of the settling basins. This flume was designed so that water could flow into any one or all four of these stilling chambers. From here water passes through three ¾-inch holes in the stilling compartment wall into the settling basins.

There are four settling basins, 70 feet 9 inches by 190 feet 6 inches by 12 feet 3 inches deep. They have a combined capacity of approximately 5 mg. These basins are designed to operate in series or parallel and provide a 6-hour 7-minute detention period.

Water leaves the settling basins, passes through slots in the weir wall and into a flume which can route it to the secondary coagulation basins or

direct to the filters as desired. At present the water is routed through the settling basins in parallel and from them direct to the filters.

Because of radical changes in the chemical, physical, and bacteriological character of the raw water caused by change of season and by a varying amount of rainfall, secondary coagulators were installed. These are duplicates of the primary coagulators. To date it has not been necessary to use them.

There are ten filter beds, each 17 feet by 41 feet with a capacity of two gallons per square foot per minute or 2 mgd, a total of 20 mgd. A common influent gate and a common waste gate serves two filter beds. A separate effluent valve and rate controller, wash valve, and rewash valve was provided for each bed. Treated water enters the filter beds and passes downward through graded filter media—the top 30 inches is filter sand and below are four layers of graded gravel, each 3 inches deep. The water after being filtered passes through a false bottom of the Wheeler type and enters the underdrain system which is a pressure chamber 24 inches deep under the entire area of the filter bed.

Each filter bed is equipped with a 12-inch hydraulic valve and a 12-inch rate controller which regulates the flow of water from the beds to maintain a constant head on the beds. Water passes through this controller into a concrete conduit which contains a sight well through which the filtered water may be observed. The water then is discharged into the clear well which is an underground reservoir of 1 mg capacity. Here it is given a final treatment of lime and chlorine.

There are five operating tables each of which controls two of the filter beds. When loss of head reaches 8 to 9 feet the operators wash the filter media by reversing the flow of water. A wash water pump of the vertical turbine type with a capacity of 10,500 gpm operating against a head of 35 feet at 860 rpm was installed for this purpose.

Water enters the bottom rising through the filter media with sufficient velocity to dislodge the material which has been filtered from the water. This water and the first filtered after the washing process is completed are both wasted.

The finished water from the clear well flows by gravity to two 10 mg reservoirs which by gravity serve the distribution systems. Previously these reservoirs had always received the water direct from the pumping stations. It was now necessary to rearrange the piping. A new 30-inch reinforced concrete Lock-Joint pipe 1½ miles long was installed from the filter plant to the Spring Hill reservoir and the piping to the pumps was also re-

(*Continued on page 121*)

### Major Equipment

Filters by the Roberts Filter Mfg. Co., Darby, Pa.

Wash water pump by Fairbanks, Morse & Co., Chicago, Ill.

Valves and Meters by the Simplex Valve and Meter Co., Philadelphia, Pa.

Alum, Lime, and Chlorine Feeders by the Wallace & Tiernan Co., Inc., Newark, N. J.

Coagulators by Infilco Inc., Chicago, Ill.

Electric Motors by Westinghouse Electric Corp., E. Pittsburgh, Pa.

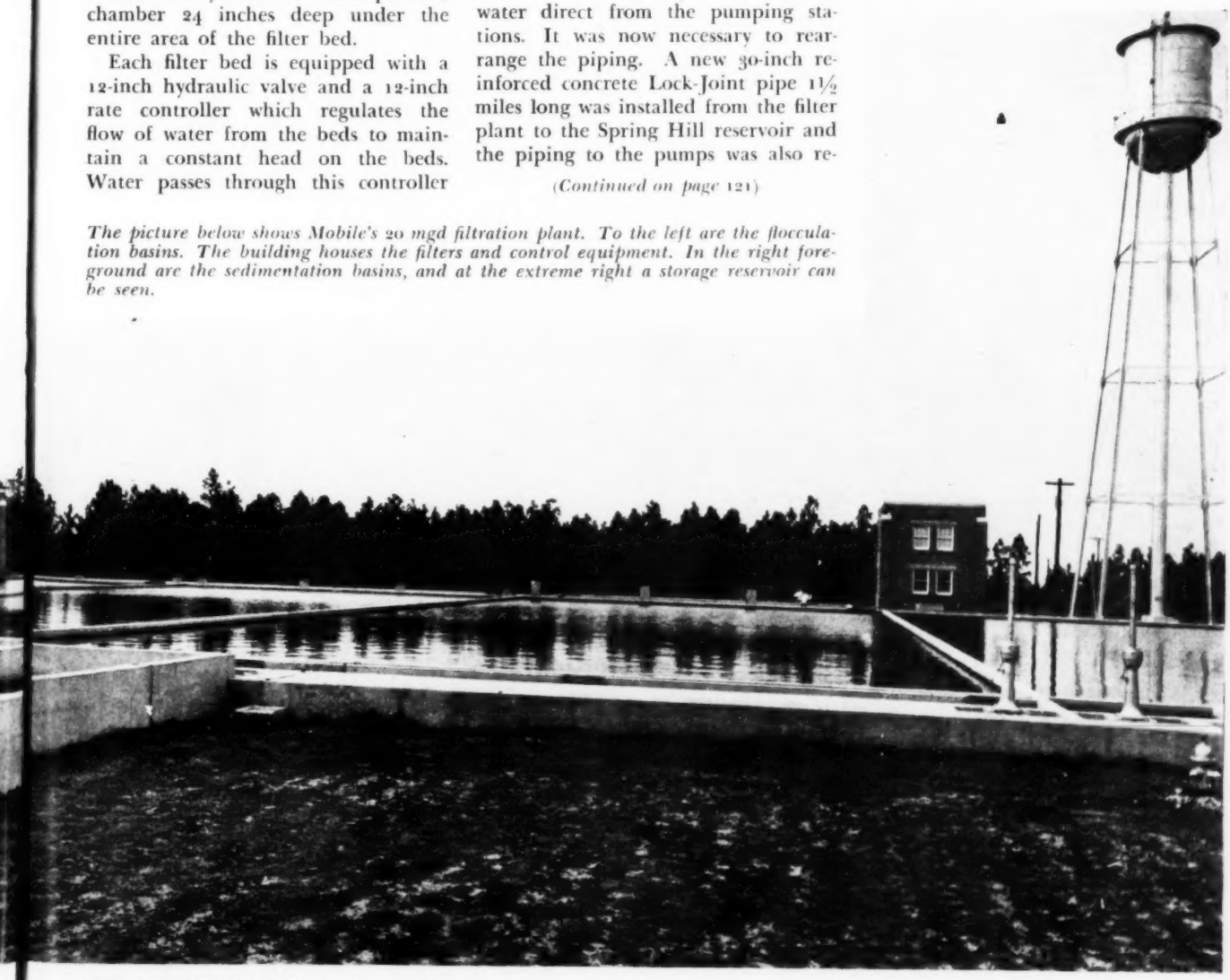
### Contractors

Filter Plant and Distribution Mains—A. H. Guion & Assoc., Charlotte, N. C.

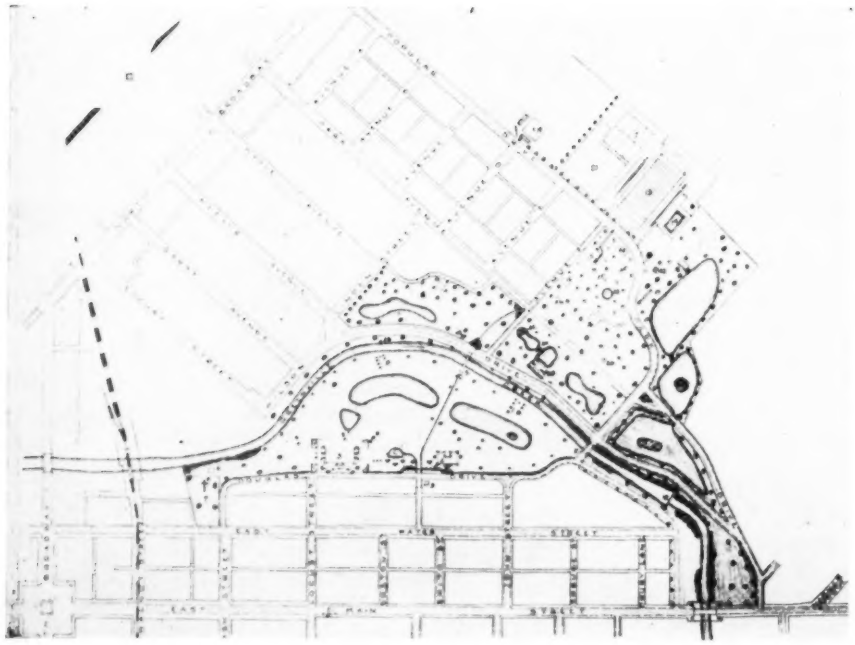
Raw Water Reservoir—F. L. Bray Constr. Co., Mobile, Ala.

24-inch Supply Main—J. E. Milan Constr. Co., Birmingham, Ala.

15 miles of 6-, 8-, and 10-inch supply lines—Sullivan, Long & Haggerty, Bessemer, Ala.



*The picture below shows Mobile's 20 mgd filtration plant. To the left are the flocculation basins. The building houses the filters and control equipment. In the right foreground are the sedimentation basins, and at the extreme right a storage reservoir can be seen.*



ABOVE: *The creek bank development area through Greenville. This improvement was made possible through the donation of Mr. and Mrs. F. D. Coppock. The donation of private capital for this development was encouraged by the city planning program.* KEY: 1. *Shrine of Peace.* 2. *Proposed Memorial Museum.* 3. *Proposed Masonic Temple.* 4. *Girl Scout Cabin.* 5. *Suspension-type foot bridge.* 6. *Block House.* 7. *Retired Cemetery.* 8. *Outdoor Furnaces, Tables, and Shelters.* 9. *Curator's Dwelling.* 10. *Tool Shed (concrete construction).* 11. *Proposed Highway Bridge.* 12. *Proposed Dam.* 13. *Stadium* 14. *Swimming Pool.* 15. *Dance Pavilion.* 16. *Picnic Shelters.* 17. *Tennis Court.* 18. *Band Shell.* 19. *Base Ball Diamond.* 20. *Rest Room.* 21. *Parking Area.* 22. *Fountains.* 23. *Wading Pool.* 24. *Shuffle Board Court.* 25. *Park Shelters.* 26. *Picnic Area.* 27. *Horse Shoe Court.* 28. *Electric Automatic Pump.* 29. *Sod Stage.* 30. *Flag Stone Foot Bridge.*

# A Small City Plans Its Future

## *Civic Center and waterfront park outstanding post-war projects of Greenville, Ohio*

By JOHN E. VANCE*

A MAN may be going on a long journey, yet he begins by taking one step." This old Chinese proverb sets forth a very simple, yet fundamental truth. The thought which it conveys by implication is equally fundamental. The saying implies that if the man does not take that "first step" his journey does not begin. Thus, he does not arrive at his destination. He is going nowhere.

For many years there has been hesitancy on the part of city officials to consider new methods in government

* Former secretary of the Greenville City Planning Commission, now Director of the Civic Planning and Traffic Board, Providence, R. I.

*Proposed Civic Center showing the three existing public buildings in the background, the proposed county courthouse in the left foreground, and the proposed city building and fire station in the right foreground. To make this area available will require abandonment of one block of Harrison Ave. and Devoe St. and two blocks of Fifth St.*

and planning. This attitude is due primarily to their fear of taking that "first step" along a new way. The fear of consequence plagues the official. He reasons, "How will this affect me politically?" "Will the deviation from the usual arouse public opposition?" "Suppose it isn't the answer to our problems after all, what then?" These questions and others have often caused public officials to continue operating their cities the most expensive way, with all sorts of lost motion in government. Too many cities in America literally have been "going nowhere," because of this attitude on the part of their leaders.

For example, there are many communities throughout the country that have no plan and no planning agency. This is especially true of the smaller cities. Many of the larger ones with problems of redevelopment are being forced to adopt planning and zoning in self defense. Thousands of small cities, however, that are very much in need of planning, may be slow in getting it, due primarily to the fact that they will have no *one* problem large enough to force the adoption of such a program. Thus, officials do not take that "first step" toward planning. They go on in the same channels of lost motion, unsolved problems, and wasted tax dollars.

It is my belief that if city officials understood the value of an adequate planning program, and if they felt its adoption could be effected without a political upheaval, city plans and planning agencies in small communities would be the rule rather than the exception.

## Greenville's Characteristics

Greenville, Ohio, is typical of the many thousands of cities in our country that need planning—and, I believe, can have planning. Greenville is in the midst of a rich agricultural county. It has what many call a rural economy. The raising of tobacco, corn, wheat, soy beans, hay, etc., and dairying, in the surrounding country, bring much money to the farmer folk. This naturally has its effect on the city's economy. Much of the industry in Greenville is directly related to farming. There are grain elevators, stock yards, slaughter houses, food processing plants, creameries, a drain tile plant, etc. A large milk-condensing plant operated by the Nestles Milk Products Corp. is also located in Greenville.

Greenville is also the home of several year-round industries not directly related to agriculture. These include a large gravel corporation, an athletic products company, a plumbers supply house and foundry, a cloth specialty company, several machine shops, stove factories, welding plants, etc. Some other plants have come to Greenville since the start of the war.

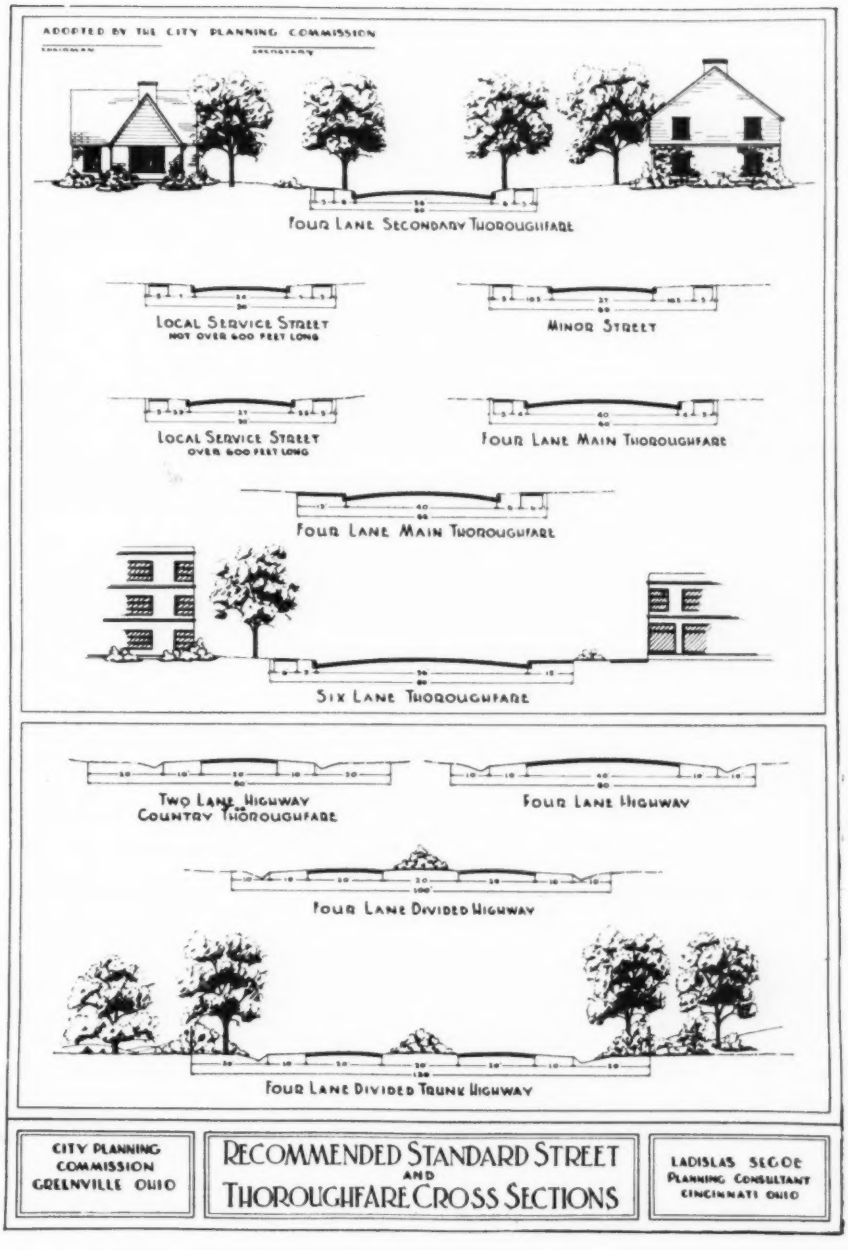
Greenville has some foreign and colored families, but not enough to cause a social or racial problem.

The population growth of Greenville has never been spectacular; the increase has been gradual, from 1,000 people in 1840, to nearly 8,000 people in 1940. Greenville is proud of its famous sons and daughters. These include Zachary Landsdowne, Lowell Thomas, Annie Oakley, and others.

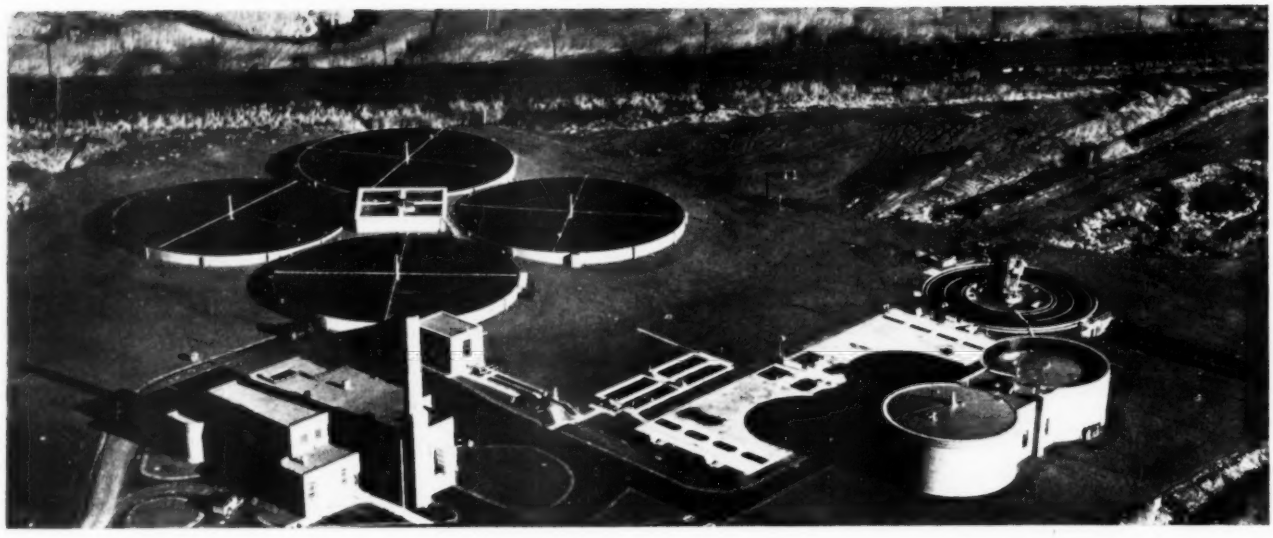
The topography of Greenville and surrounding country creates no major problems, yet the terrain is irregular enough to warrant careful attention.

Looking at this small city with its sound economy, proud heritage, and gradual growth, the average layman could see little need for planning. This was the attitude of Greenville citizens for many years. Planning, we thought, was probably all right for

(*Continued on page* 125)


ADOPTED BY THE CITY PLANNING COMMISSION
FOUR LANE SECONDARY THOROUGHFARE
LOCAL SERVICE STREET
NOT OVER 600 FEET LONG
MINOR STREET
LOCAL SERVICE STREET
OVER 600 FEET LONG
FOUR LANE MAIN THOROUGHFARE
FOUR LANE MAIN THOROUGHFARE
SIX LANE THOROUGHFARE
TWO LANE HIGHWAY
COUNTRY THOROUGHFARE
FOUR LANE HIGHWAY
FOUR LANE DIVIDED HIGHWAY
FOUR LANE DIVIDED TRUNK HIGHWAY
CITY PLANNING COMMISSION GREENVILLE OHIO
RECOMMENDED STANDARD STREET AND THOROUGHFARE CROSS SECTIONS
LADISLAS SEGOE PLANNING CONSULTANT CINCINNATI OHIO

*These recommended standard street and cross section plans are widely applicable to small communities in the Ohio region, but are, of course, adapted to existing conditions and anticipated requirements in Greenville. Most of the streets of traffic importance in Greenville are 60 or 66 feet wide and the thoroughfare cross sections show how best to improve these rights-of-way. The trunk highways in the vicinity are not among the most important state or federal highways. If they were or were likely to become so, especially of an interregional highway category, 24-foot instead of 20-foot pavement widths would be appropriate for them in Mr. Segoe's opinion.*



*Aerial view of the Rutherford Joint Meeting Sewage Treatment Plant. In the left foreground is the main building; in the background, the trickling filters. Back of the main building is the grit chamber with the coagulation basins extending at right angles to it. The sedimentation basins are parallel and to the right of the coagulation basins; the digestion tanks are at the far right. The sand filter is the circular unit beyond the sedimentation basins. Plant effluent empties into the ditch extending out from the sand filter.*

# Formula for Sewerage Excellence

***Three municipalities have combined sewage treatment facilities under competent stewardship and have achieved ingenious and economical operation***

IN 1937, on the advice of C. J. Velz, then PWA District Engineer, Rutherford, East Rutherford, and Carlstadt, N. J., organized a joint meeting to establish a sewage treatment plant to serve all three. The action was a wise one, for this joint venture netted them a single plant more economical both in original cost and in operating expense than three separate plants would have been. Moreover, they were able to secure the services of a trained operator who has given them a plant using cathodic protection effectively in a new application of this development, a system of chemical treatment which has reduced the cost of chemicals used for coagulation, a method of sludge disposal which has lowered the cost of this operation materially and at the same time provided an increasingly high degree of treatment. The plant now removes 92.5 percent of the suspended solids and 90 percent of the BOD.

The sewage to be treated presented a tough problem. Investigations showed it to be not only high in suspended solids and in BOD, but also to contain a high percentage of industrial wastes from dye, textile, plating, and ink works as well. As a result of extended study to find the best way to handle the sewage, chemical precipitation with trickling filtration was finally chosen. The high industrial waste content of the sludge which might cause difficulties in digestion led to a decision to provide for the disposal of the sludge by vacuum filtration and incineration in addition to digestion.

A high degree of flexibility was provided in designing the plant to handle the unusual industrial load. The various units can be inter-connected or by-passed, making possible a great variety of operations. It might almost be said that the plant was like a budding young genius when it went into operation in November, 1940, and so required a great deal of intelligent and understanding guidance to develop its potentialities fully. This task of developing plant operation fell to the superintendent, Albert B. Kozma, for shortly after the plant went into operation, the consulting engineer, Charles J. Kupper of Bound Brook, N. J., was inducted into the army. With a weather eye for improvements in sewage treatment, Mr. Kozma proceeded to develop the potentialities of the plant. He has devised new processes, applied old procedures to new methods, experimented, and checked. His record is even more impressive when we realize that costs have diminished as an increasingly high degree of treatment has been provided.

The immaculate plant illustrates the saying, "everything in its place and a place for everything." This is exemplified in the method of handling and storing dry chemicals. The bags are discharged from trucks onto movable platforms. These platforms, when fitted with skids, are easily moved into place in the storage room. This system provides an easy way of keeping track of the bags, saves undue handling which might cause breakage to the bags, keeps them off the floor where moisture might get to them, and is a great boon in keeping the storage room clean.

The laboratory of the plant is well equipped and gives evidence of much use. Here a complete series of tests are run to check the effectiveness of the treatment process and to obtain clues as to possible improvements. Here also tests are made to determine the best chemical to use, the correct amounts, and the proper method of application.

## New Processes Evolve

Some of the treatment processes which have been evolved were first initiated as tests in the laboratory. When test results were favorable,

there was further testing in the plant proper and if the latter tests were satisfactory, the new processes were adopted as part of the treatment.

One of the most recent of these developments was brought about by the wartime shortage of some of the chemicals used by the plant. Experiments were made to determine which of the more plentiful chemicals used for coagulation would most effectively provide the treatment needed. Several chemicals were tried, and, under the conditions existing at the plant, Ferrisul was found to be most effective. Previously liquid ferric chloride had been fed by the Wallace & Tiernan liquid feeders, but since Ferrisul is not highly soluble, it was necessary to revamp the feeders somewhat. This was done with the aid of the Wallace & Tiernan Co. With the use of the new chemical the plant has realized this past year a saving of $2,000 in chemicals over last year when the cost was $6,000—a one-third reduction in cost.

### Cathodic Protection

Another interesting development at this plant is the improvement in the effectiveness of the mechanical sand filter. This unit was found from the first to provide a high degree of purification to the plant effluent. It removed 50 percent of the suspended solids from the plant effluent passing through it. Unfortunately, however, the unit was out of service from 25 up to almost 50 percent of the time because the copper screens became clogged with a coating caused by galvanic action and had to be scoured. The filter unit was constructed with a steel undergrating on which rested a copper screen holding the silica sand filter medium. The two dissimilar metals, that is copper on steel, caused an electro-chemical action in which the steel went into solution and coated the copper screen, often sealing it.

Mr. Kozma, aware of the benefits derived from cathodic protection against this electrolytic action in water works practice, decided to try it on this unit and went into service with cathodic protection on January 1, 1944, and since then operation has been uninterrupted. Thus the operating cost was greatly reduced, and the ease with which the unit is now operated and the uninterrupted service it gives are certainly worth consideration.

The vacuum filters have been used only to fill requests for sludge because of wartime shortages of equipment necessary to their operation. Sludge is now lagooned after digestion has been completed. Previously, the yearly cost of sludge disposal at Rutherford ran to $10,000 for vacuum filtration and incineration. The only cost for lagooning is in the preparation of the beds.

### Treatment Process

This plant, designed for a 4-mgd flow and handling at present a 2.2-mgd, provides the following treatment:

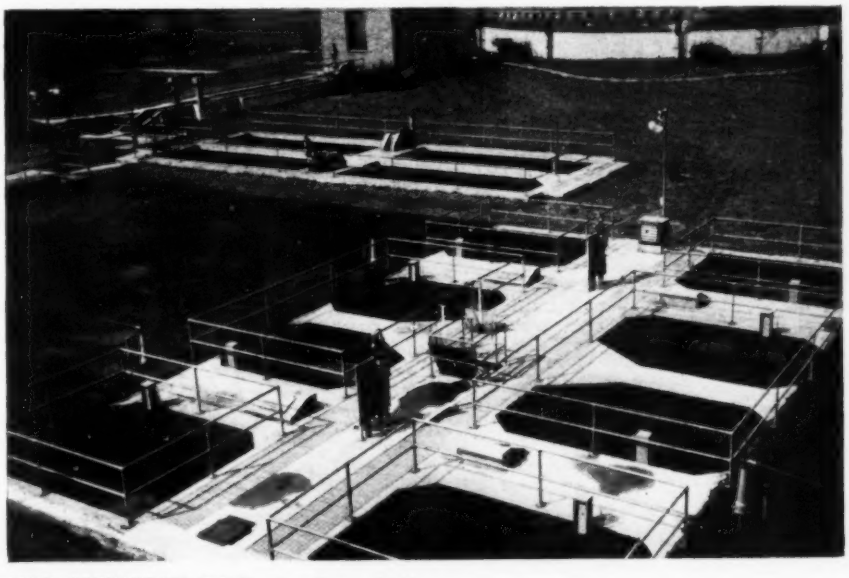
The sewage enters the plant 30 feet below ground level, passes through vertical Link-Belt bar screens which automatically remove the screenings to a Gruendler Grinder which shreds and returns them to the flow. The sewage then enters a wet well where chlorine to control odor is fed to it by Wallace & Tiernan chlorinators. Four Fairbanks-Morse centrifugal pumps, one of which is a gasoline standby, lift the sewage from the wet well from whence it flows through the plant.

The pumped sewage goes through the grit chamber and leaves it through a Parshall flume equipped with two Chronoflo floatwells which actuate the meter recording equipment and regulate the chemical feeders. Next, it passes into the Link-Belt flash mixer where chemicals are added to aid precipitation. Here chemicals and sewage are mixed rapidly and the mixture flows to the flocculator chamber, also Link-Belt equipped, where the coagulation occurs.

The flocculated sewage goes to the primary clarifier, which is part of a converted septic tank. The sludge from this unit is collected by a Dorr Monorake sludge collector. Two 2-mgd and one 4-mgd Fairbanks-Morse pumps remove the effluent from the primary clarifier to the dosing chambers of the trickling filters. The four filters are fed each by a separate dosing tank supplied from a common well. The effluent is distributed onto the filter by four-armed Yeoman Simplex distributors. Each bed has an area of .22 acres and an effective depth of 8 feet 2 inches.

The aerated effluent then goes to the secondary clarifier which is equipped like the primary and is located in the south half of the old septic tank. Like the primary clarifier, the secondary is a covered unit. Both are equipped with a patented scum valve invented by Mr. Kupper.

*Looking down from the digestion tanks at the covered, Dorr equipped sedimentation basins, which were converted for this purpose from septic tanks.*



*Albert B. Kozma, superintendent of the Rutherford plant. Beyond him is the storage platform for chlorine cylinders.*

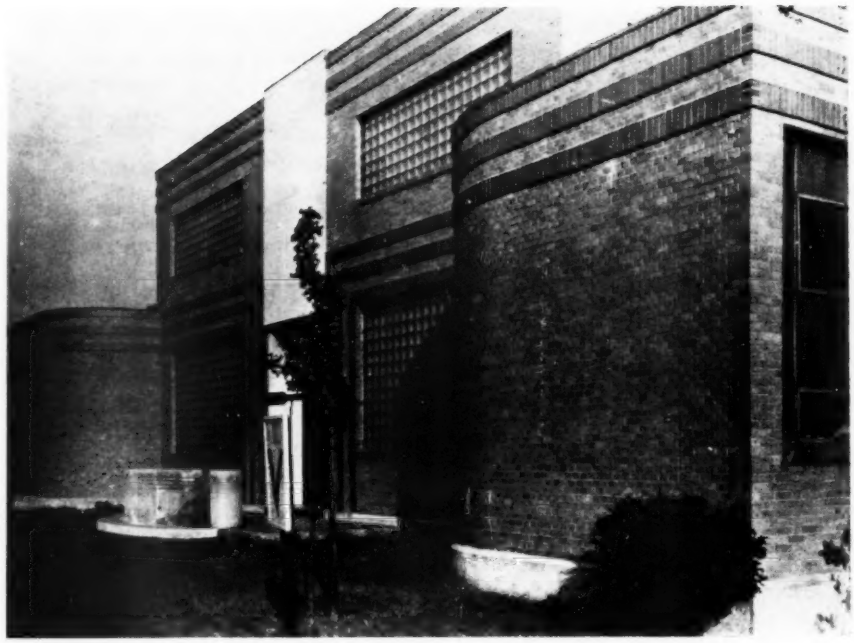
### Polishing

Effluent from the secondary units is further polished in a down-flow type sand filter manufactured by the Underpinning & Foundation Co. This unit, which is of concentric design, is equipped with hydraulic ejectors which clean the silica sand particles whenever the head on the bed exceeds a certain limit. Post chlorination is applied at this point.

Sludge removed from the clarifiers is digested in a Dorr multi-digestion system. This consists of two digesters, both heated, the secondary unit of which provides for gas collection in a floating cover. Enough gas is produced to furnish heat for all purposes in the plant for six out of every seven days.

Two Conkey vacuum filters have been provided for sludge disposal, but as mentioned before, due to wartime shortages their use has been reduced to a minimum. The plant is also equipped with an Underpinning & Foundation Co. multiple hearth incinerator in which the sludge may be dried to any desired degree or burned.

While the plant records show 92.5 percent reduction in suspended solids and a 90 percent reduction in BOD, a visual inspection is more revealing.



*Entrance of the main building of the plant*

The raw sewage coming into the plant is murky because of the high percentage of suspended solids and the large amounts of coloring matter from dye wastes. The change which the sewage undergoes while passing through the plant is so complete that the plant effluent is rendered sparkling and clear enough to fill all the needs of the plant for water except for drinking purposes. The estimated saving with this use of rehabilitated water is $1,500 yearly.

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## *A Joint Task for Industry and Government*

A CALL for "open and frank acceptance by private enterprise of the proper and essential role of government in a democracy, not as a totalitarian tyrant that usurps and absorbs the functions of its people, but as the responsive instrument of the people themselves" was voiced by Philip M. Klutznick, Commissioner of the Federal Public Housing Authority, in an address in New York on May 12 before the League for Industrial Democracy.

"Government," said Mr. Klutznick, "as an instrument of all the people, has the responsibility for removing obstacles that obstruct the efforts of private enterprise, and at the same time, with similar certainty, for providing for the supplementation of efforts to meet the needs of those for whom private enterprise cannot provide.

"We must broaden our vision to see the relation of the parts to the whole," he said. No idea should be rejected, but studied, experimented with, discussed, and where found promising, applied to the housing problem at whatever point it appears to offer the most effective method of getting the desired results.

"The core of our work in designing a better housed America is in the community. In weighing our plans against our hopes, we should recognize that whatever superstructure, whether of government or private industry, may be required, this must be erected on the firm foundation of community effort and thinking and must serve, not control, local determinations."

## *Why Parking Meters Were Removed from Some Cities*

EVEN at this late date, when 431 cities operate parking meters and 400 more want them, THE AMERICAN CITY is asked from time to time why some cities installed and then removed parking meters. Here are some of the reasons.

Parking meters caused highly emotional reactions. That is, they were either liked immediately because of the efficiency with which they combed out the curb parking traffic, or they were immediately hated as an encroachment on the liberty of American citizens. They were hated, at first, by all day parkers—the merchants and professional men and their employees whose cars cluttered up their own and their neighbor's curb to the exclusion of their customers.

Then too, the American Automobile Association was and is opposed to parking meters. That in itself was quite a pressure against them. Parking meter fees were considered just another tax against the motorist instead of payment for a privilege. As a matter of fact, basically it was neither, but rather a new method of speeding up the turnover of cars stopping at the curb.

Some cities installed meters before enabling legislation had been passed. In early days this was a cause of several removals. Now all except half a dozen states have passed permissive statutes or their supreme courts have legalized the operation of meters.

"Mechanical difficulties" are given as a minor reason for the removal of meters from several cities. At one time 15 companies were building meters; today only six or seven continue in business.

Salesmanship sometimes succeeded in placing meters in towns having no curb parking problem, resulting in "removal by the manufacturer because of insufficient income." This cause is said to account for about half of the 30 to 40 cases of removal.

Taxpayers' suits once caused trouble but they are "nil at the moment,," according to Vehicular Parking Ltd., Newark, N. J., "where a few years ago 28 were on the dockets at one time." The only case of removal during 1944 was in Chula Vista, Calif., population 5,138.

# Need Airports Be So Big?

By JULIAN WHITTLESEY
Mayer and Whittlesey
Planning Consultants and Architects
New York, N. Y.

HEAVIER, faster planes in all categories and greater wing loads have called for increasingly longer landing and take-off runs and lower glide angles. Instrument operation has called for added tolerances. Many ports which are not expandable have become obsolete or been graded down to a lower class. The Civil Aeronautics Administration, to keep a jump ahead, has ever increased the minimum plan requirements, and the planner anxiously inquires where will this end up, and has the mark already been overshot? Where millions may be involved by 500 more or less feet, and where glide angle clearance is the measure of zoning and the criterion for policy power, these questions become very real.

Before suggesting that present minima be reduced, let us have in mind some principles that seem to hold even in the face of jet propulsion, reverse blade propellors, and all the rest. First, Newton's law will hold—certainly in the event of an emergency. From the standpoint of safety planes must be able to stop or to return within the airport after a critical power failure at take-off and to land with a good margin of safety in case of overshooting the runway. Air rates are materially reduced by increasing the payloads. This calls for heavier wing loading and in turn for longer runways, except as higher power ratio, assisted take-off, improved braking techniques, etc. operated to off-set the need for increased runways. Operators, however, will take advantage of these improvements to further increase the pay load and lower the rates rather than to fly from small fields.

### Scaling Down to Limited Site Facilities Often a Necessity

So far this has referred to heavy planes, large ports. Here the question may be: is it economic under every circumstance to build facilities for the few extreme cases? The shrewd plane builder shows signs of designing, and the operator of scheduling, down to the limiting site factors that face many cities—in order that they may do business there at all.

It is appropriate to look at the record. The CAA's Technical Developments Report No. 40 of April, 1944, shows after extensive flight observations that the runway lengths generally recommended as minima for various port classes are sufficient for the safe operation of modern planes, also that the glide angle and lateral separation may be somewhat less conservative. The report gives 1,800 feet for Class I runways, 2,800 for Class II, 3,800 for Class III, and 4,800 for Class Iv, being respectively for (I) low-powered private planes, (II) medium-powered private planes, |III) high-powered private and small commercial planes. (IV) largest airliners. These figures are roughly 1,000 feet less in each class than the desirable maxima generally recommended, and give some assurance to *those who must plan* more conservatively. There are instances where secondary runways used only in strong crosswinds can be materially shorter than the major runway. Designing at the outset to take advantage of such factors may make the difference between a site being possible or impossible. Runway length is here meant as the sum of the take-off distance plus the further distances sometimes unpaved) for the airplane to roll to a stop should engine fail at the point of take-off.

### The Airlines' Desire for Longer Runways

The airlines take the view that long runways develop the full utility of their planes and hence the lowest rates. The rates between a group of cities are materially raised where one city by curtailing its airport creates a bottlenick on the payloads carried to or from other cities. A shortage of 600 feet at one city may cut to 12,000 lbs. a potential load of 21,000 lbs. carried from 1,000 miles away. Low rates develop traffic that pays for ports. Short runways may be a requisite for som cities and special schedules be possible for them. For other cities this may prove false economy after analysis of traffic and of planes to be used. This view is found in the National Aeronautic Association's Proceedings of the Joint Airport Users' Conference of July, 1944, and a fair summary of its recommendations is as follows:

(a) shorter than 3,000 feet runways for feeder lines will lessen the potentialities of the service but larger cities may require 4,500 feet.

(b) domestic mainliners will require 4,500 feet, but with expansion to 6,000 feet for larger cities.

(c) transcontinental and transoceanic service will require 6,000 feet minimum and 10,000 for a few major terminals.

The two above-mentioned reports are evidentely reconcilable and the CAA's report is summarized as follows: *"It appears that advances in designing technique are resulting in aircraft which will require no larger airports than are required by existing aircraft. It is believed, therefore, that no increase in airport dimension requirements will be necessary for many years to come."*

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EDITORIAL NOTE: "Ten-Year Planning for Private Flight Ports" and "Air Traffic Control" are the titles of articles by the same author in *The Architectural Record* for April 1945—an issue which is devoted almost entirely to these and other important discussions of airport planning.

## Architects in War and Peace

VISUAL evidence of the contribution which architects have made to the war effort and of the extent to which the profession is prepared to make an even greater contribution to better peacetime living will be provided soon after V-Day in a great public exhibit to be held in New York City, under the sponsorship of the New York Chapter, The American Institute of Architects.

In announcing the preliminary plans for this exhibit, Morris Ketchum, Jr., Chairman of the Chapter's Committee on Fields of Practice, says that the architect has demonstrated that his profession influences almost every phase of American social and economic life.

"Even before the war," says Mr. Ketchum's announcement, "the architect proved that he was endowed with the faculty of coordinating not alone the manifold factors inherent in building design and construction but also of correlating the innumerable factors related to the improvement of living standards.

"But it was during the war that he was provided with the most dramatic opportunities for manifesting these capabilities, albeit that his efforts have been shrouded in censorship. . . .

"It is our feeling that the public is entitled to know that the architectural profession, after the war, will be available to release its talents and skill into peacetime pursuits and that the same men who were able to design anything from an individual building to an entire city and everything from a drinking cup to the TVA are prepared to meet their obligations in the creation of a better world.

"It is for all these reasons that the New York Chapter of the A.I.A. is encouraged to undertake a comprehensive exhibit of the completed wartime work of its members, an exhibit which will take the form not only of illustrative material but also of examples of products for building and equipment for living."

# A Yardstick of Housing Needs

## *An Economical Method for Determining Sound Policy in Slums and Blighted Areas*

By ALLAN A. TWICHELL
Technical Secretary
Committee on the Hygiene of Housing, American Public Health Assn.

IF post-war planning programs are to meet the actual needs of cities, they must be based on closer measurement of the housing problem than provided in the past by housing surveys. Greater sharpness is needed to delimit both slums and lesser problem areas, to distinguish between the character of deficiencies in different places, and thus to indicate whether solution lies in improvement of present dwellings, in clearance and rehousing, or in conversion from residence to other uses.

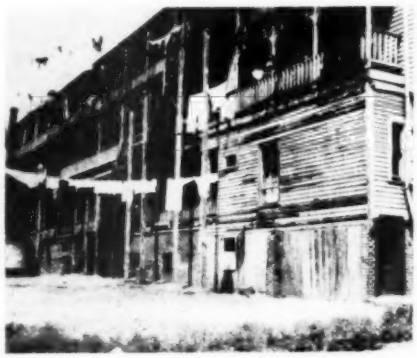
### A New Approach

A method of appraisal to serve these purposes has been developed by the Committee on the Hygiene of Housing of the American Public Health Association. Employing only tested methods of investigation, it gives valid measurement of housing quality, and can be applied by regular staffs of health or building departments and city planning commissions.

In this new system the physical environment of dwellings—a basic element in housing adequacy but ignored in the usual housing survey—is evaluated as fully as conditions of the dwelling itself. Factors appraised include land crowding, intermixture of business or industry with residence, exposure of dwellings to street traffic hazard or to railroad smoke and noise, provision of the basic utilities, and accessibility of community facilities such as schools, parks, and playgrounds. In the dwelling appraisal, customary survey items such as toilet and bathing facilities and overcrowding are used, but new indices have been developed for condition of repair, safety of egress, adequacy of heating and lighting, sanitary condition of the premises, and other items significant for health or safety. Criteria of overcrowding have been greatly sharpened beyond the usual single index of persons per room.

Both dwelling and environmental conditions are appraised in terms of objective schedule items which assure consistent reporting by different observers. Any condition which falls short of a decent contemporary standard is given a penalty score in accordance with its seriousness as a threat to health, safety, or fundamental livability. The term "basic deficiency" is used for extreme conditions commonly recognized by official agencies as a ground for corrective action. Dwellings showing such defects are designated as substandard, whatever their classification by total penalty score.

The standards and scoring values used have been derived from the Committee's "Basic Principles of Healthful Housing" and checked with public officials to assure their reasonableness as a basis for remedial action. The scores (assigned in the office, not by the enumerator) have been shown by tests in numerous cities to give an accurate picture of housing quality from extreme slums to completely modern neighborhoods. Scores also provide a concise expression of housing quality which simplifies comparison of one dwelling, area, or type of housing with another.



HOW BAD IS IT?
*The technique here described will give the answer.*

Clear, well-designed forms present the results for ready understanding, either in terms of individual case studies or through statistical analysis of mass data. Clarity in this respect, together with the wide range of factors appraised, makes the findings useful to many official and unofficial agencies, and provides them with the basis for a new type of joint attack.

Procedures are highly integrated to avoid waste effort, and surveys can be made at low cost despite the refined measurement achieved.

### What Questions Will It Answer?

The usefulness of the method can be illustrated from the results of an official survey recently conducted in New Haven where it was used to give a basis for post-war planning in the city's three chief problem areas, housing 15,000 families.

The appraisal shows both the number and location of dwellings substandard in the official sense described above. Maps such as Figure 1 from the New Haven study show clearly the distribution of slums and lesser substandard areas, together with the pattern of quality above these levels. These classifications have exact meaning: in the present map a substandard area is one in which half to three-fourths of the dwelling units have basic deficiencies; a slum is one where three-fourths to all dwellings have basic deficiencies. Not only is the presence of substandard conditions revealed; the degree is also measured—in a test study of alley slums in another eastern city every dwelling was shown to be substandard, and 48 percent of them had five to eight basic deficiencies apiece!

While half the dwellings of the New Haven study were found to be substandard, slightly less than a quarter showed those combinations of defects which local officials agreed would warrant demolition. Thus a clear indication is given of residual areas in which problems of enforcement agencies will continue.

Poor environment was shown in these central slums to go hand-in-hand with poor dwelling conditions. This is not always true or to be taken for granted. Where it does occur, it foreshadows the excess cost and difficulty—or even the impossibility—of reclamation for housing.

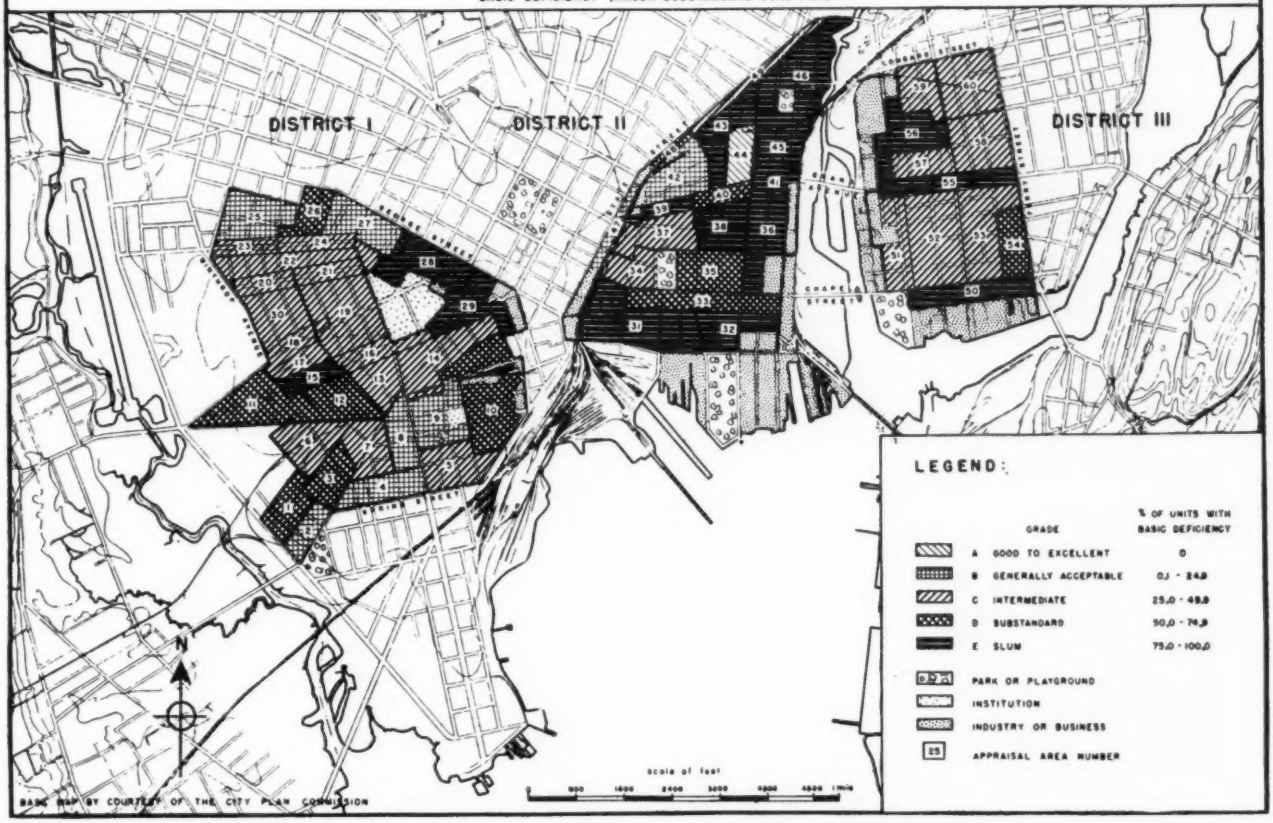
Problems of neighborhoods in the middle range—the blighted districts—are shown quite as fully as those of slums. In sections of this type, numerous dwelling defects were shown which could be remedied through modernization by individual owners, but emphasis was also put on environmental conditions which call for—and would respond to—planning and joint action of neighborhood interests.

Over four-fifths of the dwellings with rent below $25 were shown to be sub-

1944 NEW HAVEN HOUSING SURVEY NEW HAVEN HOUSING AUTHORITY

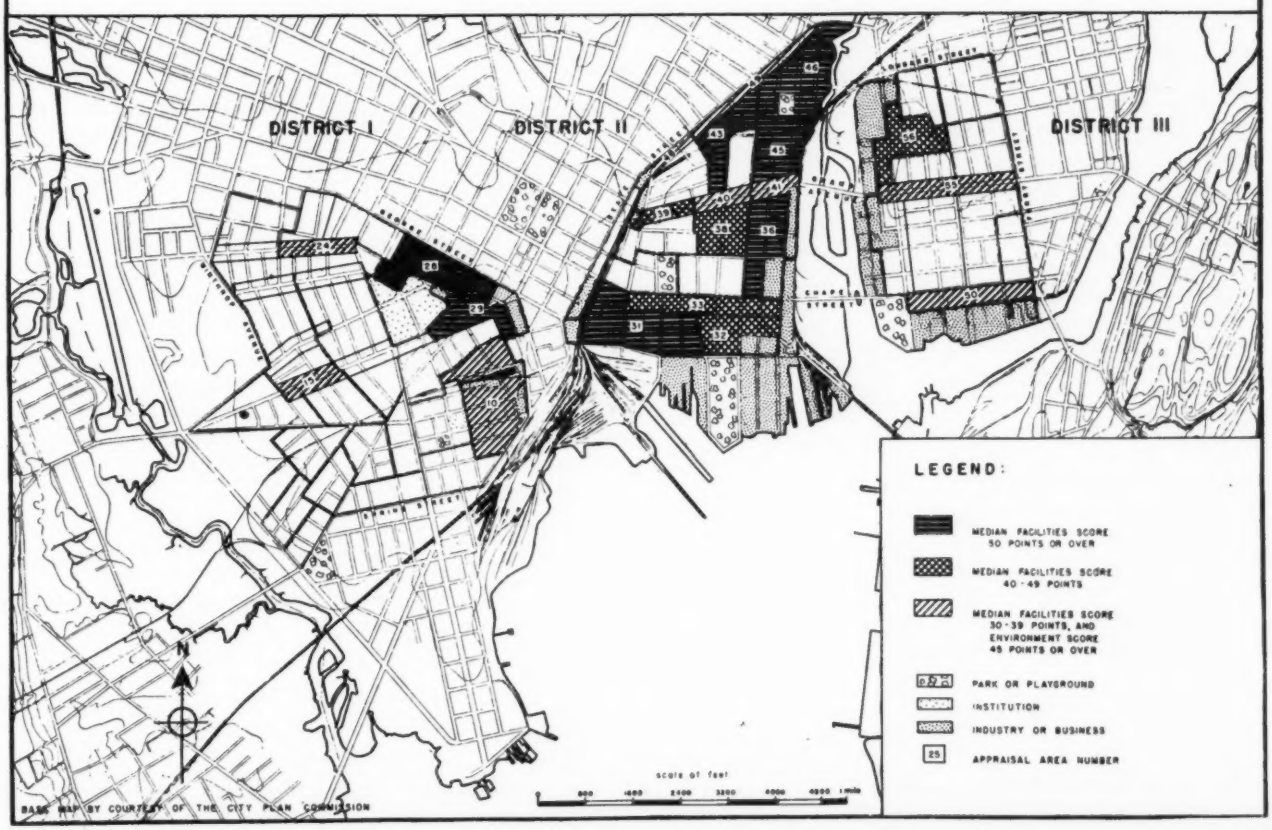
## FIGURE 1 : QUALITY OF DWELLINGS

APPRAISAL AREAS CLASSIFIED BY PERCENT OF UNITS WITH BASIC DEFICIENCY (MAJOR SUBSTANDARD CONDITION)




1944 NEW HAVEN HOUSING SURVEY: NEW HAVEN HOUSING AUTHORITY

## FIGURE 2: POSSIBLE SLUM CLEARANCE AREAS


DISTRICT I
DISTRICT II
DISTRICT III
LEGEND:
MEDIAN FACILITIES SCORE 50 POINTS OR OVER
MEDIAN FACILITIES SCORE 40 - 49 POINTS
MEDIAN FACILITIES SCORE 30 - 39 POINTS, AND ENVIRONMENT SCORE 45 POINTS OR OVER
PARK OR PLAYGROUND
INSTITUTION
INDUSTRY OR BUSINESS
25 APPRAISAL AREA NUMBER
N
scale of feet
BASE MAP BY COURTESY OF THE CITY PLAN COMMISSION

standard for one or more aspects of facilities, maintenance, or occupancy. This is a valid indication of the level below which new housing is most needed. In the case of Negro families it was clearly indicated (though the group included in the study was too small to prove this) that dollar for dollar the non-whites obtain dwellings with facilities about 50 percent poorer than do white families in the same rent bracket.

While overcrowding is not general in New Haven, it is extreme among the larger families. Over half of those with six persons or over showed basic deficiencies for crowding which would justify admission to a public housing project, and over one-third had two or three such conditions.

It may be of interest to note in passing that the public housing project included in the survey (area 44 in District II of the map) showed excellent quality in general. Its showing was marred, however, by small room-sizes, which are partly responsible in turn for a rather wide spread of overcrowding in its less objectionable forms.

### Will It Help in Shaping Policy?

Even this brief summary will indicate some of the specific policies and action which can be based on this type of measurement. From a broader viewpoint, the respective roles of private enterprise and government assistance become — when housing conditions have been measured in relation to family income—less a matter of debate and more a matter of calculation.

The amounts and location of slum clearance justified are determined not by a rigid mechanical formula but by criteria which local agencies accept as making sense. Analysis of scores for this purpose will delimit sharply the possible clearance areas and show the relative urgency of need in each. The second map shows such a determination, with clearance areas of first priority in darkest hatching. Areas of lesser urgency and those of marginal status are shown in the two lighter shadings. When policy for such areas has been determined, the way is open for police-power agencies to cease patchwork enforcement in the worst slums and to concentrate their energies in slightly better sections where general enforcement of a fair basic standard is possible.

Competing land requirements of the housing program and of commercial or industrial development can be appraised so that potential conflicts between one constructive program and another can be resolved in the early stages of those programs.

Housing standards can be put to work on a broad front. The sponsors of a study using this method might well include not only municipal enforcement agencies and the housing authority and planning commission, but also numerous other bodies whose work would benefit by reference to housing standards but which have not had impetus or staff to develop such standards for themselves—as for instance a welfare commission, real estate board, social service agencies, and even the tax officials.

Finally, the fact that existing inspection personnel—who are all too often absorbed by aimless inspections on complaint—are used, makes it possible to keep abreast of housing trends as a normal part of municipal administration. Cities need not wait ten years for the census or depend on windfalls of personnel from work relief projects to get the information needed for sound housing policy.*

* This new approach is fully described in three publications of the American Public Health Association, 1790 Broadway, New York 19, N. Y. Part I, "Nature and Uses of the Method" ($1), is a non-technical introduction, fully illustrating the New Haven results and sketching the conditions under which effective studies can be made in other cities. The full procedures for execution are given in two manual volumes: Part II, "Appraisal of Dwelling Conditions" ($3); Part III, "Appraisal of Neighborhood Environment" ($2). Part I is now available; the manual volumes will be published during the summer of 1945.

# Surplus Property for Local Governments

THE National Institute of Governmental Purchasing reported to its members on May 8, publication in the *Federal Register* of that day of the long-awaited Regulation of the Surplus Property Board* which provides for governmental priorities in the purchase of federal surplus property. Under this regulation, whenever a disposal agency proposes to sell an item of surplus, it must first make the material available for sale to federal agencies and to state and local governments. Notices of offerings of surplus will be circulated simultaneously among federal and state and local governmental priority buyers. Federal agencies will have 18 days after the date of the notice to file orders. State and local priority buyers will have that period and an additional 12 days to file their orders—30 days in all. Federal agencies' orders will be filled after the 18th day and state and local governments' orders will be filled on or after the 30th day from whatever remains. The orders bearing WPB preference rating will be filled ahead of unrated orders.

When the program is in full operation—not before July 25—the disposal agencies will grant priorities and send notices of items available to each state or local governmental unit which has filed with the disposal agency a formal statement of its needs.

To give state and local governments time to ascertain their needs and file statements, they are permitted to purchase on the priority basis until July 25 without having filed the statements. No notices of offerings will be sent to state and local governments during this period until July 25 by the disposal agencies, but notices will be given to the press and to governmental organizations on items in short supply as listed in Exhibit A.

Since state and local governments will receive neither notices of availability of items nor the 12-day priority after July 25 unless they have filed a statement of their needs, governmental buyers are advised to file statements as soon as practicable. Statements may be amended as often as desired and remain in effect for six months. A separate statement should be filed with each disposal agency. It should be borne in mind that state and local governments will deal with the Department of Commerce for consumer goods rather than with the Treasury Department's Procurement Division under the terms of an Executive Order effective May 1, 1945.

A copy of the entire Regulation 2 containing a list of surplus property forms for statements of need and addresses of disposal agencies and branches, is obtainable from the National Institute of Governmental Purchasing, 730 Jackson Place, N.W., Washington, 6, D. C.

* See THE AMERICAN CITY for February 1945, page 5.

As the disposal agency to handle the sale of surplus war housing properties and facilities, the Surplus Property Board has designated the National Housing Agency, which will function in this matter through its constituent unit, the Federal Public Housing Authority.

# Quotable Thoughts for your Talks and Reports

Installment No. 11 of a Department of Ideas, Old and New, for Public Speakers and Report Writers.

## To Build a Better World

The world at war is a hideous revelation of what selfish, anti-social powers for evil can bring to mankind. Insofar as we plan ahead, we are already in the post-war world; eventually we shall be able to give actual expression, instead of the lip service we now give so generously, to building a better world founded on honest concern for human freedom from tyrannies, large and small. The planners, designers, and builders of the physical portion of this better world must not fail the faith of those who now offer their lives for it. Normalcy will certainly not do. The challenge is clear; the job to be done, enormous; the responsibility, awfully humbling. It shall be our privilege to fight the meanness and selfishness and tyrannies of little groups and little men offering explanations, seeking delays, seeking appeasement.

—From an editorial in the June 1944 issue of *Pencil Points*

"  "

**Cato said the best way to keep good acts in memory was to refresh them with new.—Francis Bacon.**

"  "

## For Full Enjoyment of Life

My intelligence and heart both tell me that if it is good for me to enjoy life, it is good for other people.

I wish to order this existence, which is to me so fine and full of fun, so that I need never enjoy it at the expense of others, nor they at the expense of myself. And in the belief that this is a possible state of things for mankind to bring about, I go forward.

John Galsworthy

"  "

**We have loaned our liberties to the government, but we expect to get them back with interest after the war.—Margery Fry, English publicist, to West Virginia Conference of Social Work.**

"  "

## Conservation—Rehabilitation—Redevelopment

Careful planning for conserving community values and resources and preventing mistakes in new development, while a sound principle and valid at all times, will be particularly important in the years ahead. The enormous cost of the war will leave us all much poorer individually and as a nation. We can no longer afford to be extravagant and wasteful. Planning for our cities, as for the use of our national resources, must henceforth be directed toward conservation and protection of what is satisfactory, rehabilitation of what is still capable of being salvaged, and redevelopment of what is deteriorated beyond repair.

And there are other reasons why comprehensive, long-term, over-all planning for the improvement of our urban communities is more necessary now than ever before. First, because rehabilitation and redevelopment is the chief task confronting our cities, and such operation cannot be done lot by lot as the original development, not even block by block; but must be undertaken in large units of neighborhood size and as an integral part of an over-all community plan, if the results are to be permanently good physically and socially, as well as practicable financially. The second reason is the greater interdependence of parts and activities in the modern city as a machine for production, distribution and living which demands that all parts and activities be properly coordinated and geared one to the other if the urban machine is to function efficiently and economically. The third and pressing reason is the great amount of public and private construction bound to be undertaken in and about our cities when we can build again.

Ladislas Segoe
City Planning Consultant

(From *The Modern City*, a 1944 pamphlet of the Buffalo City Planning Association)

"  "

## Hero or Bum

The town drunk was a dirty bum too lazy to work;
His poor wife did her best to support the family,
But it was so hard that she finally gave up in despair.
The son of the town drunk was kicked around,
And was frequently pointed out as a very bad boy;
He was underfed, poorly clothed, dirty and truant;
He got into trouble and with very little ado
Was sent to the State school for bad boys.

There he was understood for the very first time;
He was well fed, properly clothed and housed.
It is true he was a bit crowded, but that was not new.
For the first time in his life he was permitted
To forget that he was the neighborhood problem,
The good-for-nothing son of the town drunk.
When released, he planned to go straight,
It was hard though, and—then came the war.

He volunteered early—the more quickly to get away
From a community that he despised in bitterness;
He worked hard and soon got first class stripes;
Then he was a corporal and after months a sergeant.
One day he was called in and offered a chance
To go to officers' school—to become a commissioned officer!
After months of work and study he got his gold bar
And six months later the silver bar—the town drunk's son!
On his very first leave of absence he came back home
Back to the home town? Oh, no! To the Indiana Boys School
Where he had been sent as a bad boy—incorrigible!
Proudly he stood before his good friend the superintendent,
"If the town had been willing to spend a little money on me,
The town drunk's son, I wouldn't have needed to come here.
The Army's spent $10,000 on my education,
And I'm going to make it a good investment, you bet I am!"

Juvenile delinquency is very serious, we are told;
Yes, it really is expensive business to pay the cost
Of crime, and court expense, of state institutions.
It would have been much less expensive earlier.
Men who are worth spending ten thousand dollars,
And even thirty-five thousands dollars, on their education
Are worth playgrounds, gymnasiums, teachers
When they are lads of ten and twelve and fifteen.

Thurman B. Rice, M. D.
In the *Monthly Bulletin* of the Indiana State Board of Health

"  "

## Maxims and Epigrams

*(From the collection of William C. Beyer, Director, Philadelphia Bureau of Municipal Research)*

Blessed is the city that has a public scandal, for it shall be civically regenerated.

Nothing in the whole arsenal of Mars is so explosive as a new idea.

A wise voter seeks his facts about government before they are obscured by the fog of a political campaign.

Democracy is a form of government under which the people are permitted to make their own blunders.

If God had made no reformers, men would still be living in caves; if He had made only reformers, no men would still be living.

Doomed to failure are all plans which seek to imprison the future within the walls of the present.

Time has spared us many ancient cities, but no ancient empires.

None of the roads to civic heavens are passable until they are paved with good administration.

It is not only vain but perilous for citizens to have power unless they also have trustworthy information.

# Trolley Coach Damage to Pavements Discussed by City Engineers

ONE of the problems of the increasing size of certain street vehicles, including the results of conversion from street cars to buses and trolley coaches, is the question of wear on pavements not originally designed for such a volume of large vehicles. A year ago, for instance, the question was raised in Des Moines, Iowa, as to whether the trolley coaches which constituted the principal transit service there were damaging the pavements. Investigation revealed that they were.

Monroe L. Patzig, Patzig Laboratories, Des Moines, Iowa, surveyed other "trolley coach cities" to learn whether similar damage was occurring in them due to trolley coach operations. His report, condensed in the May, 1944 issue of THE AMERICAN CITY, listed twenty-six such cities of which nineteen reported damage, six reported questionable and one did not answer the question.

When this question was raised again, THE AMERICAN CITY decided to obtain further information. Reports from the city engineers of twenty-four cities stated more or less damage, and no damage was reported by twelve cities. Following are the facts given by the cities reporting damage to pavements:

*Baltimore, Md.*, W. N. D. Fischer, Highway Engineer:

We understand that trolley coaches are no heavier than buses in this city, but we believe, due to the fact that the trolley coaches start faster than the buses, they have a tendency to cause more damage to the paving at the starting points.

*Columbus, Ohio*, P. W. Maetzel, Chief Engineer:

Trolley coach operations in Columbus, Ohio, show some wear on high-type pavements attributable to the fact that stops are made at the *same* curb locations, as against normal truck traffic distributed over entire paved area. This is most noticeable where subgrade drainage is not in good condition.

*Des Moines, Iowa*, J. M. Tippee, City Engineer:

Trolley coaches have damaged some of the Des Moines pavements greatly. This is largely due to the fact that trolley bus lines have been established on old and unsuitable residential pavements. Our newer pavements have not been affected so far. Empty trolley buses weigh from 21,000 to 22,000 pounds and loaded weigh up to 35,000 pounds which is heavier than the motor gas coaches used here.

*Flint, Mich.*, Otto K. Philipp, Acting Director, Public Works and Utilities:

Damage by trolley coaches to Flint pavements of types not particularly designed for such traffic is unquestionable—principally due to following the same lines of travel. This is particularly noticeable at stops.

*Indianapolis, Ind.*, Arthur B. Henry, City Civil Engineer:

On May 25, 1936, the city, through its Board of Public Works and Sanitation, entered into an agreement with Indianapolis Railways, Inc., whereby said company was given authority to operate its trolley coaches on certain streets and public places in said city under certain terms and conditions. The termination date of this agreement is March 26, 1956.

Under the terms the company agrees to pay the city of Indianapolis for the actual number of miles of streets used by the company for trackless trolley car operation, where local or intra-city street cars are not also being operated on rails, at the rate of $357.23 per mile per annum. According to information on file, this rate seems to have been fixed mainly upon the proportion by weight of trackless trolley car traffic to the total vehicular traffic upon those streets so used, as obtained by actual traffic counts; and such proportion applied upon the estimated yearly cost per mile for constructing new pavements of the average width of roadways operated upon.

The initial payment under such agreement was for 36.72 miles of trackless trolley operation. This mileage has subsequently been increased by new routes and extensions to a total of 50.10 miles, as shown on the statement for the period ending December 31, 1944. A total amount of $17,931.54 was paid by Indianapolis Railway Company, Inc., to the city of Indianapolis for the operation of trackless trolley cars upon public streets for 1944. The total distance in miles of trackless trolley operation upon public streets is approximately 55 miles, which includes distances coincident with street railway lines now in operation.

There were 162 trackless trolley electric cars in operation as of February 9, 1945. Weights and other pertinent information on such trackless cars are as follows:

WEIGHTS AND TIRE SIZES

| | |
|---|---|
| *Type* 516 *to* 564 40 passengers (seated) | |
| Front wheels | 8,040 lbs. |
| Rear wheels | 10,600 lbs. |
| Total | 18,640 lbs., unloaded |
| Tire size—10:50 x 22 front; 9:75 x 22 rear. | |
| Spacing front axle to rear axle—16′ 2″. Wheels on axle at 6′ 10″ centers. | |
| *Type* 596 *to* 652 40 passengers (seated) | |
| Front wheels | 7,820 lbs. |
| Rear wheels | 11,570 lbs. |
| Total | 19,390 lbs., unloaded |
| Tire size—10:50 x 22 front; not given for rear. | |
| Spacing front axle to rear axle—17′ 0″. | |
| *Type* 563 *to* 657 41 passengers (seated) | |
| Front wheels | 11,280 lbs. |
| Rear wheels | 10,180 lbs. |
| Total | 21,460 lbs., unloaded |
| Tire size—10:50 x 22 front; not given for rear. | |
| Spacing front axle to rear axle—19′ 4⅜″. | |

The maximum number of passengers observed were 83 in the larger trackless trolley cars and 76 in the smaller size, both being very crowded at the time.

The maximum weights as permitted

by state law on public roads and streets in Indiana are 18,000 lbs., gross weight per axle, and 800 lbs. per inch of tire width as measured between the flanges of the wheel.

Roadways and street surfaces repaired or resurfaced during 1944, on streets used by trolley coaches totaled approximately 1,500 square yards. Most of this repair work was required at the loading points along the routes. This repair work is estimated to have cost the city of Indianapolis approximately $7,500. It is estimated that in 1945 it will cost more than $10,000 to repair damage done during the past winter.

*Kansas City, Mo.*, Reed McKinley, City Engineer:

The trolley bus is not much heavier than the gas-driven type, but the rapid acceleration and stopping of these vehicles is extremely hard on the portion of pavement known as "bus stop." More careful driving would eliminate most of this damage, but we are not expecting any such consideration by a driver trying to meet a schedule.

*Knoxville, Tenn.*, L. C. Bailey, City Engineer:

It has not been definitely determined whether trolley buses are damaging streets in this city or not.

*Peoria, Ill.*, L. D. Jeffries, City Engineer:

In the city of Peoria the trolley buses and gas buses are doing much damage to the pavements, particularly those older pavements having thin concrete bases. Trolley buses do the least damage. Buses traveling over the same area and the impact at stop streets cause considerable damage.

*Portland, Ore.*, Ben S. Morrow, City Engineer:

Trolley coaches have been operating in this city for about ten years and we find little damage to pavements which can be attributed to their operation. The only places where such damage is apparent is where the coaches operate in narrow lanes, as around loading zones. In these places the load is restricted to narrow strips and the weight of successive coaches in identical tracks tends to break down the pavement.

*Seattle, Wash.*, J. Robertson, Supervising Senior Engineer, Department of Public Works:

The transportation system of the city was changed over in 1939 from street cars to trolley coach and bus operation. We have experienced considerable damage, especially in bus stops, and also on the older pavements of from 15 to 35 years ago, in this operation. Many of these bus routes operate over pavements which previously carried only lighter traffic, and it is our opinion that the pavements never were of sufficient designed strength to carry the loads to which they were subjected by trolley coaches or buses. We further believe that if truck operation of comparable loading were carried on over such pavements at the same frequency, the possible damage would be comparable.

*Shreveport, La.*, H. E. Barnes, City Engineer:

Trolley coach traffic does do considerable damage to streets, particularly streets where no former rail line existed. The weights per wheel are not so excessive, but the continuous pounding of the same area or lane creates fatigue where casual traffic with heavier loading would not. We have had to ask the trolley company for a considerable annual fund for this maintenance which has been granted.

*Youngstown, Ohio*, James C. Ryan, Commissioner of Engineering:

Trolley coaches are damaging pavements but not necessarily more than gas buses. Fast starting tends to roll up bituminous resurfacing along curbs.

### Other Cities Reporting

The cities that are listed below reported no damage to pavements by the trolley coaches operating in their cities, or certainly no more damage than by buses or trucks:

Chicago, Ill. (J. L. Markey, Engineer of Streets)
Cincinnati, Ohio (H. H. Kranz, City Engineer)
Cleveland, Ohio
Covington, Ky.
Fitchburg, Mass. (Joseph M. Pierce, Commissioner of Public Works)
Kenosha, Wis.
Kingston, Pa. (Robert L. Williams, City Engineer)
Newark, N. J. (L. Dudley Coles, City Engineer)
New York City (John C. Riedel)
Salt Lake City, Utah
San Francisco, Calif. (John J. Casey, City Engineer)
St. Joseph, Mo. (Andy J. Branum, Pres., Board of Public Works)

Any heavy vehicle causes wear and damage to pavements—possibly to a greater extent at stops if the brakes are applied in a severe manner; and the starting damage possibly bears some relation to the rates of acceleration—and trackless trolleys do have rapid acceleration. On the other hand streets and roads are for vehicular traffic for the benefit of the public, and in the normal advancement of civilization, naturally the vehicles may become heavier and operate at higher speeds as the years go on. This holds true for vehicles carrying commodities as well as human freight and the only answer is to accommodate the advancement in vehicular performance with suitable roadways and road surfacing to serve such improved vehicles. No one in this day and age would think of riding in an automobile if it only had the speed of the old horse-drawn wagon—to derive the benefit of the modern automobile it is necessary to have improved roads. This same line of reasoning applies to mass transportation vehicles.

## C.E.D. on Rent Control

WITH high consumption, high production, and high employment as its post-war objectives, the Committee for Economic Development believes that "these objectives will best be served by the ending of all wartime controls as soon as the emergency needs for them have ended.

"At the same time," says the Committee in its 1945 policy statement on "Post-War Employment and the Removal of Wartime Controls," "it must be very clear that no control should be removed at a time when its removal would jeopardize any phase of the war effort, or the successful transition to a healthy peacetime economy."

Types of wartime controls discussed in the report include price controls, consumer durable, perishable, and semi-durable goods, surplus government stocks, and rent controls, consumer rationing, manpower controls, wage controls, export and import controls, and direct and indirect financial controls. The section on rent controls reads as follows:

"Rent controls should be liquidated as soon as practicable. Nevertheless they may be necessary for a longer period than now seems needed for most other controls.

"Upward revision in rent ceiling should be permitted where general increases in operating costs of property place landlords in a position substantially less favorable than they were in the 1939-40 base period. When private building can be resumed, policy should be liberal enough to stimulate new construction and to encourage improvement and modernization of existing structures. At the same time, if any more-than-normal gap appears between the cost of new construction and rent levels, it should not serve as a basis for upward revision of rents on already existing housing.

"Continued control after the war will be necessary in areas where housing remains acutely short. Under such conditions, ending of rent control would prove inflationary and chaotic. Action to end rent controls should take place on a local rather than on a national basis, and controls should be ended in any area as soon as serious shortages disappear."

Copies of the complete policy statement may be obtained from local C.E.D. chairmen or from the national C.E.D. office, 285 Madison Avenue, New York 17, N. Y.

# Planning Committee Goes Direct to the People

MANY towns and cities are conscious of a need to improve their facilities if they are to attract to themselves new industries, and build up a growing, satisfied population. Marshalltown, Iowa, with conditions common to hundreds of towns throughout the nation, attacked its problem last November when the Post-War Planning Committee went directly to the people for recommendations. Marshalltown's Rotary Club cooperated with the Planning Committee and sent out a questionnaire to some 4,700 citizens. The answers, 600 in all, were analyzed by Rotary's Post-War Planning and Fact-Finding Committee. Several hundred individuals read and discussed the various sections of the questionnaires and the results of their findings are included in a report by the Post-War Planning Committee which is summarized for THE AMERICAN CITY as follows:

### Industrial Growth—the First Desire

Most replies showed the first desire of citizens to be for industrial growth which would provide more jobs at better pay. New plants proposed included soy bean processing plants, corn processing plants, an implement and machinery plant, garment factory, paper box factory, brick, tile, plastics, and airplane-parts factories, with recommendations to expand present milk and meat processing plants. Lack of industrial growth in the past was attributed to the housing situation and to the apparent lack of suitable building sites for homes. Next in importance came the lack of recreational facilities in the city. There was a general request for an arena where games and sport events, and live stock shows could be held. A low-fee golf course was suggested.

In answers regarding housing, over 70 percent of the 600 sending in questionnaires expect to put up houses after the war, mostly their own homes ranging from $5,000 to $7,000 in cost, with some as low as $2,500. Half the builders expect to finance themselves completely, half will need FHA or similar assistance. Interest in a large modern apartment house was expressed by many, not as a place of residence for them but as an attraction to salesmen for the district who would establish themselves in Marshalltown if such a facility were available. There was much criticism of the city for permitting the remodelling of old, unsafe dwelling houses into apartments.

All residents wish to live within two miles of the court house and all want to be within the city school district.

### Educational Improvements

Many recommendations were made for new school buildings and for increasing the curriculum, especially in the field of vocational training courses in agriculture, the industrial arts, aeronautics, home nursing, and machine shop skills. There were requests for improvements in the public library, an expansion of its services, and for keeping it open on Sundays and summer evenings, together with additions to the available magazines, popular science publications, fiction, etc.

A free clinic for the city was recommended and, in the interest of public health, many stressed the need for cleaning up the city's rest rooms, the alleys and streets, and establishing a garbage pick-up system. Some 84 percent favored having a park commissioner, and many recommended a tree trimming program and general street clean-up for the residential and business districts.

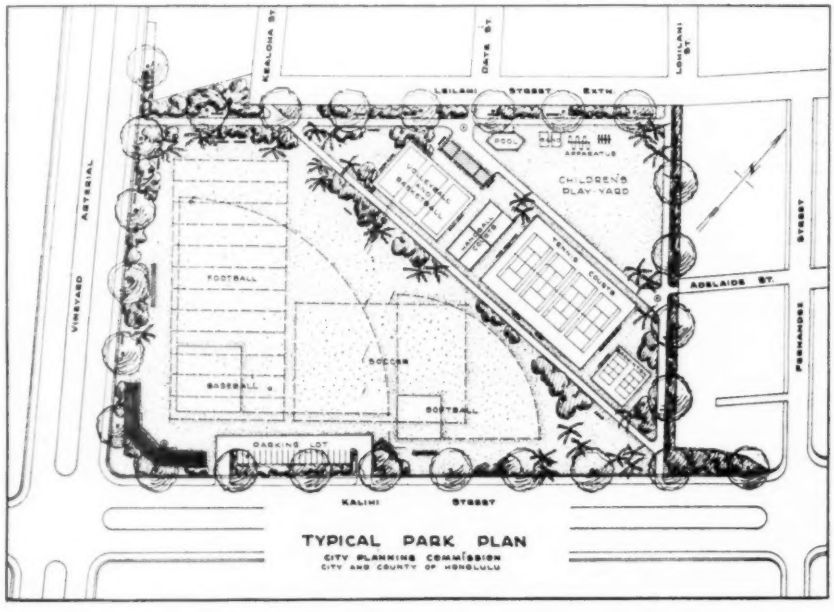
Many wanted more department stores and various types of downtown shops, together with a first-class modern cafeteria. After the war purchases will be wanted in this order: automobiles, electrical appliances, painting and decorating, furniture, radios, refrigerators, residential remodelling, electric and gas ranges, rugs and carpets, washing machines, plumbing fixtures. . . .

Other recommendations included extension of bus lines taking in some towns as far distant as forty miles, improvement of railroad terminals, and some move toward tying the town in with air service.

### "Growing Up Post-War"

"Briefly," said Lloyd J. Larson, Chairman of the Post-War Planning Committee, "the survey reveals a realization of need for Marshalltown to commence growing up post-war. That industry must grow—that the growth and expansion of industry depends upon adequate and suitable housing—more and better schools—more and inviting recreational facilities and a clean city to make it attractive to new business, new factories, and the families that must be brought to town with them. . . ."

## Honolulu Plans During War Years




FROM "1939-1944 MASTER PLAN," CITY PLANNING COMMISSION, CITY AND COUNTY OF HONOLULU, T. H.

*Honolulu, Hawaii, visualizing the city as a motivating force for its citizens instead of a dormant group of buildings, has been maturing a Master Plan during war years for the coordination of community activities, both public and private, in the city and county of Honolulu. Its proposals are based on factual data.*

# Boston Needs $1,000,000 Fire Equipment In 10 Years

***The minimum requirements of the Boston Fire Department include $100,000 worth of apparatus a year. A complete radio communication system, 100 new fire alarm boxes, 51 new vehicles, and 4 new houses are specified.***

By WILLIAM ARTHUR REILLY
Fire Commissioner 1938-1945
Boston, Mass.

THE shortage of men available for fire duty in this department did not improve during 1944-1945. At present 292 employees of the Fire Department are in military service and of this number 255 are privates in the department. We have been able to replace only 84 of these men, with approval of the Civil Service Commission.

### Auxiliary Fire Force

The training of auxiliary members of the Fire Department stopped with the lifting of civilian defense regulations in 1944. However, there still remain a number of men with an interest in the Fire Department who continue to serve as auxiliary members of our organization, making themselves available for call in case of emergency.

Last year increases in salary were granted to the uniformed force establishing a $2,500 maximum for privates; $2,900 for lieutenants and $3,100 for captains. Likewise the starting wage for privates was raised from $1,800 to $2,000, and the step-rate period to maximum pay reduced from five years to three years.

### Apparatus

During 1944 two American LaFrance 1,000-gallon pumping engines were delivered; 1 Pirsch 1,000-gallon, and 1 Mack 1,000-gallon pump, both ordered in 1943.

In addition, 6 new motors were ordered and 3 received for use in old apparatus. Three new tractors were ordered. These are to be attached to old but serviceable ladder trucks.

Five additional pumping engines of 1,000-gallon capacity have been ordered for delivery in 1945—3 American LaFrance, 1 Ward LaFrance and 1 Pirsch being included in this order.

It will be necessary to continue an annual appropriation of at least $100,000 a year for a period of 10 years in order to modernize the entire fire-fighting equipment of our department. We shall, as soon as priorities permit, obtain replacements of our present rescue trucks, emergency lighting plants and fuel wagons, and we should obtain some mobile water tanks for use in the grass-fire sections of our city.

Regular replacement of antiquated fire equipment of the department should be continued with an annual appropriation of not less than $100,000, in accordance with the present program. This estimate anticipates the acquisition of fire equipment at lower than current war prices, and possibly the acquisition of governmental surpluses at low prices. The operation of new apparatus should reduce present maintenance costs by 50 percent at least, or enough to pay for two 1,000-gallon pumping engines a year.

The sum of $18,750 was appropriated for the necessary expense of building boilers and water tanks for one of our fireboats (Engine 47) during the past year. After an additional expenditure of $40,000 for installation costs, it is expected that this boat will be placed in service during 1945 in a condition which will make it relatively trouble-free for the next ten years.

Two-way radio frequency modulation sets were installed in all chief officers' cars replacing the old AM sets. Extension of this two-way communication system will be undertaken as soon as materials are available, but meanwhile at least all chief officers' cars and the fireboats are available for communication with Fire Alarm headquarters on a two-way basis operating on a wave-length exclusively reserved for the use of our department. A new transmitter at the central fire-alarm station was installed, and two additional pick-up stations are to be secured as soon as materials are available.

#### Some of Boston's New Fire Equipment Since 1938

| | |
|---|---|
| 2 | 2-way radio system (FM) in chief officers' cars |
| 3 | 100-foot aerial ladder trucks |
| 7 | 1,000-gallon pumps |
| 3 | tractors with enclosed cabs or ladder trucks |
| 6 | new motors for pumping engines |
| 50 | new gas masks |
| 20 | new spray or fog nozzles |
| 19,500 | feet 1¼-inch hose (previously not used in department) |
| 20 | canvas life nets |
| 3 | resuscitators and inhalators (including one gift) |
| 2 | smoke ejectors |
| 2 | air compressors |
| 6 | heavy maintenance trucks |
| 4 | light maintenance trucks |
| 39 | passenger cars |
| 16 | OCD pumps installed on hose wagons |
| 9 | portable Homelite floodlighting units for ladder companies |
| | New telephone switchboards at fire alarm and headquarters to handle increased traffic. |
| | Radio receivers assigned to every patrol desk |
| | Modern office machines at headquarters building |

### Post-war Projects

*West Roxbury*—Construction of a firehouse on city-owned land, Roxbury Parkway and Washington St. Estimated cost $80,000 (land and plans ready).

*East Boston*—New fire-house in Boston should be undertaken. Cost $80,000.

*Downtown Boston*—New fire station to combine Ladder 17 in process of being purchased by the New England Medical Center, $100,000.

*North End*—New fire station on Hanover Street to accommodate Ladder 1 and Engine 8, $100,000.

*Headquarters*—New Fire Department Headquarters at Bowdoin Square (plans now being drawn). The present fire station has a foundation which meets the requirements for an addition of two floors above the present quarters.

Plans are being drawn for these floors and when they are constructed the execu-

tive offices of the Fire Commissioner, the Chief of Department, the Fire Prevention Division, and the Electrical Inspection Division will be transferred to this location. Features planned include a museum for old equipment and relics; a comprehensive central library of books and literature; a chemistry laboratory; a photography room; a central filing room for documents and papers of the department; and suitable quarters for legal, engineering, and public information services in connection with the Fire Prevention Division. The estimated cost is $150,000.

*Apparatus Repair Shop*—It is imperative that a new building be constructed or purchased to provide adequate accommodations for the repair and maintenance of motor equipment. The present motor-vehicle repair facilities are antiquated and outmoded, having been designed originally for horse-drawn vehicles. Space is needed for the simultaneous repair of from 4 to 6 ladder trucks and from 4 to 6 pumpers or hose wagons. In addition, garage space is required for 20 pieces of reserve fire equipment and auxiliary portable pumps and 30 passenger cars. Accommodations should be provided also in this building for a modern fireproof paint shop; space for storage of repair parts; a machine shop; iron worker's forge; battery shop; and upholstery repairs. The estimated cost of such an automotive repair shop with suitable equipment is $150,000, exclusive of any land cost.

*Fire Alarm Maintenance Building*—The removal of the headquarter offices from 60 Bristol St. to Bowdoin Square will make space available for the Fire Alarm Maintenance Division, now located in a building one hundred years old. The Fire Alarm Maintenance Division can be transferred to 60 Bristol St. where spacious accommodations will be available for the various offices, machine shops, construction crews, and suppliers of the division.

Construction of a $75,000 one-story building in the yard connecting the present Maintenance Building on Bristol St. and the Headquarters Building should be undertaken as part of this project for the purpose of providing necessary servicing and garage space for the Fire Alarm Maintenance vehicles.

*Fire Alarm Boxes*—Installation of at least 100 new fire alarm boxes in strategic locations of the city including placement of a fire alarm box at the entrance door (accessible to the public) on all public and parochial school buildings, motion picture theatres, and at various institutions not now having such equipment. This should be undertaken as soon as possible. Cost $50,000 approximately.

*Fireboat*—Acquisition of a diesel engine fireboat has long been desired by the Fire Department because of its economy and flexibility in operation. This acquisition would have been made by now except for the war. Abandonment of one of our present costly fireboats (now 50 years old) and replacement with a more economical diesel-operated boat will cost approximately $100,000. Savings in operating cost may offset this investment in ten years.

*Service Vehicles*—Immediate replacement of 39 passenger cars; the acquisition of 12 light trucks; 3 fuel wagons, one for each division; 3 rescue wagons, one for each division; and 3 lighting plants, one for each division, should be accomplished at the earliest possible moment. Daily delivery of gasoline in our own fuel trucks might possibly result in savings sufficient to pay the cost of the fuel trucks within 2 years. Estimated cost $125,000.

*Underground Wiring*—Steps for the acceleration in the placing underground of all overhead wires throughout the City of Boston, interrupted during the war years, should be taken.

*Auxiliary Water Supply*—It is recommended that the Public Works Department construct reinforced concrete fire cisterns in various parts of the city for auxiliary or emergency fire department use at points distant from the waterfront, rivers, or ponds. In case of earthquake, hurricane, or other disturbances, the Fire Department should have access to such water reservoirs, if the water mains are broken. Specifications for the cisterns successfully installed in San Francisco after the earthquake are on hand at the Fire Department for reference.

Platforms on the Charles River and Fort Point Channel would be of value for emergency use also because pumping engines could draft from such platforms and supply water through large hose lines across the Back Bay, the West and South End. Likewise such platforms at other locations, such as Jamaica Pond, the Neponset River, and Upper Charles River would prove valuable to adjacent localities in emergencies.

The total cost of these projects approximates $1,100,000 for new apparatus, but the investment in new apparatus may easily result in an annual saving of from $35,000 to $50,000 in repair work and parts replacement now necessary to maintain 100 pieces of apparatus 20 to 25 years old.

The investment in a new diesel operated fireboat will save $10,000 a year in fuel and the same amount annually in repair work alone.

This investment would give Boston:

- 4 new fire stations
- 1 modernized old station
- 1 new Headquarters Building
- 1 new Fire Alarm Maintenance Building location
- 1 new apparatus repair and storage shop
- 1 new fireboat to replace present over-age boat
- 30 new passenger cars
- 12 maintenance trucks
- 3 new fuel trucks (replacement)
- 3 new rescue wagons (replacement)
- 3 new lighting plants (replacement)
- 100 additional fire alarm boxes
- Complete radio communications equipment in all vehicles
- Annual purchase of 2 ladder trucks and 5 pumping engines.

Spaced over two years a capital investment of $55,000 per year will accomplish these results, exclusive of recurring costs for replacement of vehicles and modernization of property.

# Monterey Park Trailer Tax

MONTEREY PARK, a suburb of Los Angeles located six miles from the city, has recently inaugurated a trailer tax that has brought a wave of protest from trailer park owners. The ordinance taxes each trailer 10 cents a week, and is entirely different from the San Diego ordinance.

In justifying the new tax, O. C. Selzer, adviser to the City Planning Commission, insists that the new ordinance is not discriminatory, but actually eliminates the previously unequalized burden of taxation among the city's population. Former taxation plans, he says, did not contemplate the existence of a class of persons with no fixed taxable residence, yet these persons have all the benefits of health, police, fire protection, schooling and all the other advantages provided for taxpayers in the districts where the trailerites live.

The effect of large populated trailer camps, he says, is to raise the burden of taxation for property holders of the district. The new 10-cents-a-week tax, therefore, is merely intended to equalize the tax burden among all residents, those who own homes and those who live in trailers. Trailer coach parks in Monterey Park accommodate from 10 to 42 trailers or families and it is only fair that these residents contribute to municipal taxes, especially in consideration of the fact that, from one trailer park alone, there are 19 children attending the local schools.

A tax on trailer coach parks, Mr. Selzer maintains, is the only realistic approach to a serious municipal problem. Evidently some trailer park owners agree with this stand, for, since the ordinance was adopted a short time ago, more trailer park permits have ben applied for and issued than there were parks established altogether during the seven years preceding the ordinance.

MARK MCMILLIN.

# Neighborhood Shopping Centers

*Shopping center, River Oaks, Houston, Texas. Generous parking space, controlled architecture, and adjacent apartment groups separating the shopping center from single house developments are features.*

SHOPPING centers for residential neighborhoods are rapidly becoming a major consideration in community development. Why not do the daily shopping close to one's home, in attractive and adequate centers, instead of facing the traffic and time hazards of downtown city shopping?

Many city planning commissions are facing such a question and are becoming more and more alert to this opportunity to encourage the building of shopping centers which may be integral parts of community life and not mere commercial ventures, calling forth neither neighborhood loyalty nor pride.

In search of practical solutions to the neighborhood shopping center, the Community Builders Council of the Urban Land Institute has during the past year investigated existing and proposed centers for the purpose of finding out what experience has taught and what principles stand out in sound shopping-center developments. Conclusions have been based on a study of the Shaker Heights Shopping Center in Cleveland, Kansas City's Country Club Plaza, the River Oaks' Shopping Center at Houston, Westwood Village of Los Angeles, Highland Park Village in Dallas, and many other less well-known examples, some of which have been in existence for many years. These findings have been published in *Urban Land*, 1737 K St., N.W., Washington 6, D. C.

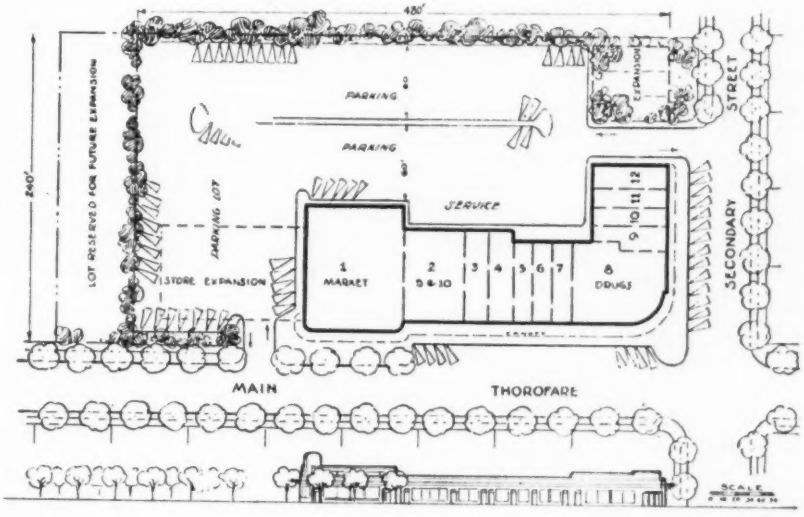
## Integrated with the Neighborhood

The Institute finds that it is highly desirable to plan the shopping center as a definite segment of a residential neighborhood with generous allowance for parking and expansion. It examines parking habits and recommends efficient handling of cars according to the number of patrons using the center. Consideration is given to centers ranging in size from ten shops for a neighborhood of 500 families to centers of 50 to 100 or more shops for larger communities. Nor are entrances, service alleys, sidewalks, and approaches neglected in this study. There should be a buffer strip of green or of apartment houses, churches, community houses, etc., between the shopping center and the single-house area, the Institute finds.

Some general architectural principles and conclusions about types of shops have also been reached. While accepting harmony of architectural design as essential, the Institute recommends considerable flexibility in building and suggests the use of various colors, when desired, to maintain identities and differentiation of shops according to their functions.

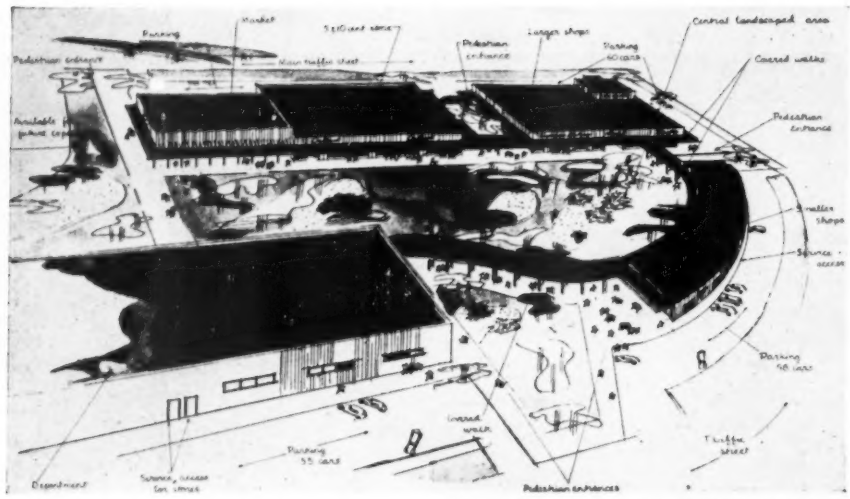
Control of outside signs on shops is recommended, and the Institute points out that in some instances prohibition of neon signs has been enforced with the approval of the local merchants' association. In general a 12-inch letter is held adequate for legibility from a distance. Projecting roof signs are condemned and often the elimination of paper signs on windows is made a condition of the lease.

Variations in the depths of shops, easily removable rear walls permitting expansion, and the placing of switchboards and plumbing on side walls are good accepted practices, and recommended. Store widths and heights, the construction of basements, and second floors with their more difficult cleaning problems are all considered in the report. *(Continued on the next page)*




| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1. Market | 8,000 sq. ft. | 5. Beauty Shop | 1,000 sq. ft. | 9. Stationery | 1,000 sq. ft. |
| 2. Variety | 3,300 " " | 6. Mens Wear | 1,000 " " | 10. Radio | 900 " " |
| 3. Delicatessan | 1,500 " " | 7. Cleaner | 1,000 " " | 11. Shoe Repair | 900 " " |
| 4. Ladies Wear | 1,500 " " | 8. Drugs | 4,200 " " | 12. Hardware | 1,000 " " |

*Shopping center for a small community of 500 to 700 families incorporating principles approved by the Community Builders' Council of the Urban Land Institute.*



ILLUSTRATION, COURTESY ARCHITECTURAL FORUM

*In Linda Vista, Calif., the shopping center has a unique feature in its planted court surrounded by shops on three sides. Here children may play in safety while parents make their purchases.*

### What Shops Should a Center Include?

As to actual shops, a small center usually has a cash and carry market, service grocery, drugstore, beauty shop, delicatessen, cleaner, shoe repairer, and pick-up laundry. The medium size center may also include a bakery, barbershop, candy and nut shop, dress and lingerie shop, 5 and 10 cent store, electric, radio and record shop, florist, gas service station, haberdashery, millinery, photographer, repair shop with keys and locks, restaurant, shoe store, variety and gift shops, and dentist's and doctor's offices on the second floor. To the larger center may be added a bookshop, large bowling alley, boys' shop, children's shop, dancing school, interior decorating shop, popcorn stand, theatre, telegraph office, etc. In every instance shops should be grouped to accommodate shoppers' convenience.

Among illustrations shown here, the center at River Oaks, Houston, Texas, meets the need for controlled architecture with flexible adaptation of designs to the need of individual shops; here also one sees the recommended separation of single houses from the shops by means of a group of apartment houses.

At Linda Vista, Calif., a modern center has been created along practical, ingenious lines, discussed by *The Architectural Forum* in a recent issue. The construction follows a 14-foot module grid with a combination of uniform board and batten exterior with show windows of varying sizes to meet tenants' needs. Floors are of cement with floors and ceilings treated to provide fire and sound protection. The exterior walls of redwood are painted grey-green, and native slate-blue tiles are used beneath the windows. Heating is by oil furnace. Outdoor lighting, with fixtures designed by the architect to take overhead wires, gives a soft indirect illumination for the shoppers' park enclosed on three sides by shops.

## Public Works Construction Advisory Committee of the Federal Works Administration

FEDERAL WORKS AGENCY PHOTO

APPOINTMENT of a Public Works Construction Advisory Committee by Major General Philip B. Fleming, Federal Works Administrator, was reported in THE AMERICAN CITY in May (p. 82). The committee members represent 12 national organizations engaged in or responsible for planning, design, or operation of public works, and will advise with General Fleming on post-war public works needs.

*Committee Members shown from left to right:* SEATED: *F. Stuart Fitzpatrick, Manager, Construction and Civic Development Department, U. S. Chamber of Commerce, Committee Secretary; E. Lawrence Chandler, Washington Representative, American Society of Civil Engineers, Committee Chairman; Col. William N. Carey, Chief Engineer, Federal Works Agency, who will act as contact between the committee and General Fleming.* STANDING: *Earl D. Mallery, Executive Director, American Municipal Association; Major Edmund R. Purves, American Institute of Architects; S. Logan Kerr, American Society of Mechanical Engineers; H. E. Foreman, Managing Director, Association General Contractors of America, Inc.; Frederic Bass, Executive Director, American Public Works Association; J. W. Follin, Managing Director, Producers' Council, Inc.; B. S. Crihfield, alternate for Frank Bane, Executive Director, Council of State Governments; R. J. Gray, Building and Construction Trades Department, American Federation of Labor. Two other committee members not shown here are: Paul V. Betters, Executive Director United States Conference of Mayors, and Hal R. Hale, Executive Secretary, American Association of Highway Officials.*

# Your New Airport—Why, Where and How

MANY citizens, city officials included, ask why municipalities finance and build airports. They were not asked to build railroad stations. Why should not the airlines and feeder lines provide the facilities essential to their operation?

It is true that the communities through which a railroad was to pass were not expected to finance and build the tracks and depot within them. The railway age came at a time when there was no other adequate form of long distance land transportation; the superiority of trains to stagecoaches and wagons was obvious. There was incentive to build railways. There was big money in them. Big men, both in ability and buccaneering, were attracted, and they networked the country with lines paid for by government subsidies and stock sales.

The air age, on the other hand, arrives at a time when nearly every village is on a railway line or served by fast capacious buses, and when one in every five or six of the country's total population owns a private automobile capable of taking the family anywhere in the western hemisphere. Air transportation had to, and has to, prove itself and find its place in the public transportation system. Air transportation of passengers, mail, express, and cargo is, as yet, more expensive than ground transportation. The spread will narrow, personal aircraft will compete in price with the automobile, and reasons for personal ownership will increase in number and appeal. Meanwhile, the cost of airports greatly exceeds the commercial returns to be expected for years in almost any city. That is why even the great rich county of Westchester, N. Y., leased its airport for development and operation to the North American Airport Corporation and the Gulf Oil Company for a term of 15 years.

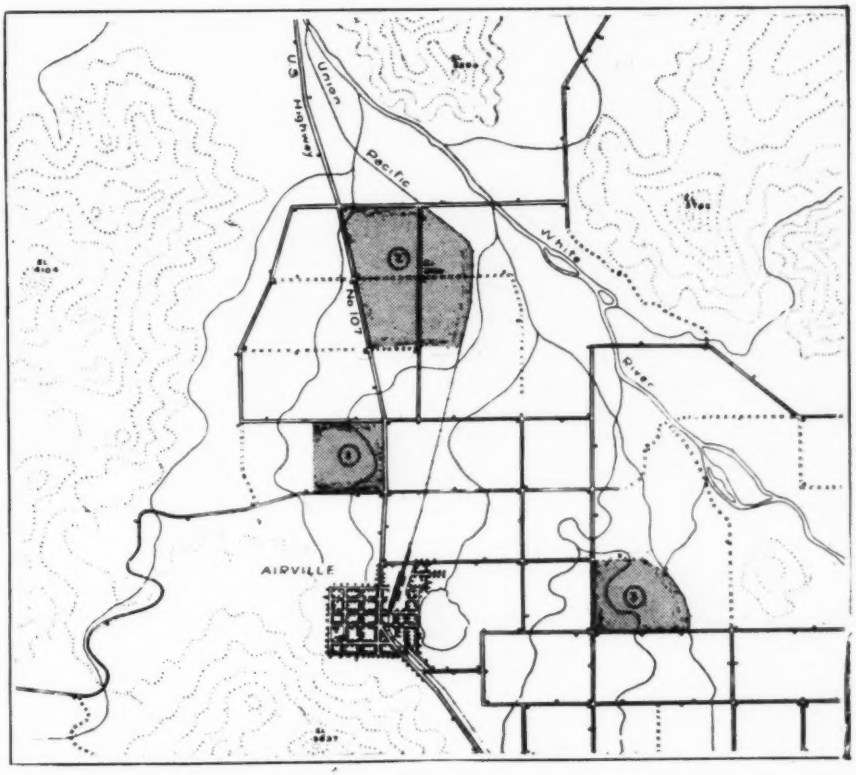
Most people probably recognize the desirability of encouraging the development not only of a great new industry, a worldwide industry, but of a new conception of life on earth as well. What all this amounts to is presented attractively in an important booklet prepared by the Shell Oil Company for communities that want to get in on the ground floor of the air age. Flying will affect every conceivable phase of life, says this book. Business and professional people, salesmen and medical supplies, perishable food and flowers, will travel by air. Flying will be taught in high schools, and those who do not own planes will hire fly-yourself planes at the local airport. All this may sound remote and expensive to many people, as automotive travel did in 1905. But aviation has already grown too big—the war has shown that there are too many important interests at stake for the obstacles to remain many years. They will be swept away until aviation is a taken-for-granted, conventional element of civilization.

Aviations means airplanes. Everybody sees what strides have been made in the size, speed, and safety of airliners and cargo planes during the war. In the manufacture of training planes, grasshoppers, and cubs, equally significant advances have been attained in safety, utility, simplicity, and economy. An airplane, like a jumper, must have something under it in order to jump, and a place to land. There can be no practice, no rapid progress, and no events until the field is provided. This is the present responsibility of all communities with prospects of future air traffic. A community without this prospect can join with a neighboring town in developing suitable landing and take-off facilities. This is happening right now. The development of these facilities is the only part of aviation's progress that is lagging—and it is a vital part.

### Opportunity Open to All Communities

The skyways of tomorrow are beginning to form a pattern—main lines and a crisscross of connecting feeder lines. The tendency is to level geographic advantages and handicaps. Airplanes can travel anywhere and everywhere. Applications have been filed for 500,000 miles of new air routes against 48,000 operating in 1941.

The United States has about 3,000 civil airports today. At least twice that number is expected to be needed in a few years. Is your town on the global map? Airport construction costs no more than a few miles of the highways now serving your town, and will link it with the skyways of the postwar world. With municipal ownership of the site and facilities, future revenues from rentals and concessions may ultimately make the investment a profitable one, aside from giving the cities more adequate controls over land-user and transportation services




*These sites have been selected for consideration near Airville. Why was Site No. 2 selected as the most desirable from the aeronautical, engineering, and economic standpoints? The answer is given graphically in large simple charts in a brochure prepared by the Shell Oil Company, 50 W. 50th Street, N. Y. C.*

than they have ever had in the case of railroad yards and stations.

It costs nothing to organize an aviation committee of say 12 persons of rather diverse experience with a common determination to develop the facts and make recommendations toward the long-time welfare of their town. If it is found that there is visible post-war use for an airport or airpark, the selection of the site is the first consideration. The aeronautical, engineering, and economic factors in site selection are discussed in the Shell brochure. Eight charts show how sites are selected, weighed, and the best finally settled on, and then developed into an airport of Class 1, 2, 3, 4, or 5 calibre, with the advice of an airport engineer of the regional office of CAA.

The matter of airport surfacing will be a problem, involving grading, drainage, base causes, and, except in the smaller communities, either asphalt or concrete surfacing. All these factors are discussed and construction costs and comparative advantages are submitted for different types of surface treatments and pavements.

Although cities have provided airports for more than 25 years, never till now was there incentive to plan them for a close-knit nationwide and worldwide system of full-scale air transportation. There was never too much experience to draw on, and out-of-the-way locations and discouraging costs and results often plagued the airport manager as well as the city council and taxpayers. The airline cities were practically forced to build airports, at great expense, and many of these are not now suitable for the needs of modern aviation. They must rebuild and build new airports. Thousands of towns, however, do not now need to provide facilities; but fortunately there is an extensive desire among these communities to provide them as an investment in the nation's future. More fortunately, there is now a way to obtain technical and economic advice on the type or class of airport to provide, where to put it, and how to operate it toward becoming, where possible, a self-supporting municipal utility. In a pocket of the Shell brochure is an 80-page pamphlet on *Airport Design* by the Civil Aeronautics Administration. CAA is in the best position to see the complete picture and your town's spot in it. Numerous other competent agencies, like the great oil companies, are willing to assist you.

# New Registration System in Erie County, Pa.

By WALTER RUDOLPH
Erie, Pa.

PERIODICAL complaints from voters and bickering among political opponents caused the Erie County Commissioners to appropriate $2,500 in January 1945 for the installation of a modern system in the registration office.

Included in the change are new type cards, master sheets and a photography process, providing almost instantaneous street lists prior to primary and general elections. Designed for speed and modernization, and a paring of costs to the taxpayer, the system had been under study for some time.

This new Remington Rand system consists of an Index Visible Card, one card for each voter with the necessary information typed on the top line and filed on a visible panel, each card resting on the one below in such a manner that every voter's name is always in view.

These cards are arranged on the panels by precinct, and alphabetically by voters' names. New cards may be inserted in proper order, or obsolete cards removed, without disturbing the sequence of the other cards. Thus, it is easy to keep the record up to date.

When the time comes for publication of the voter's registration list, it is a very simple, accurate and speedy process to reproduce these lists photographically on lithograph plates directly from these visible panels. Each panel contains approximately 450 names and the required number of voters' Poll Lists are reproduced without confusion, error, or proofreading.

Dell Darling, chairman of Erie County's registration commission, believes the new system will eliminate the confusion and strife which swept the registration office previous to elections in other years.

An additional improvement is the practice of giving Chief Registrar Joseph C. Williams a day-to-day count of party enrollments. Formerly, it was necessary to check all registrations to determine party strength.

## *Cities Planning New Electric Utilities*

THE Paducah, Ky., City Council has taken steps to acquire the local electric utility and has informed the private utility that the city also wants to buy the gas system, the International City Managers' Association reports. Springfield, Mo., has agreed to buy the local electric, gas, and transportation systems for $6,670,000, and plans to spend $500,000 in improving the power plant and distribution system.

Estes Parks, Colo., Rolla, Mo., and Houston, Minn., recently voted to acquire their local utilities, while Clarinda, Iowa, defeated a proposal to establish a municipal light and power plant and Ft. Wayne, Ind., turned down a proposal to buy electric properties which operate in competition with the municipal electric plant. Other cities now taking steps to acquire local gas and electric utilities are Louisville, Tucson, Columbia, S. C., and St. Joseph, Mo. Cincinnati's city council is considering the possibility of purchasing gas and electric utilities, and Tampa has started proceedings to acquire the local electric utility.

## *Soldiers Will Want Airports*

THE airplane will be used extensively only when it can furnish us better transportation than the automobile. The development of airports is a most important move in this connection.

Inasmuch as there is a lag in everything, we find that large numbers of communities are not ready to finance the building of airports. They will appropriate a million dollars to improving a road but buying the land for an airport is an expenditure to which they are not accustomed. I firmly believe that airports should belong to the public but I am inclined to believe that in the next few years the majority of them will be built by returning soldiers who wish to make a living on the airport, and that these fields in turn will be picked up and made into a complete airway later.

The growth of aviation depends more on the increase in airports than on any other thing and I am very glad your magazine is in a position to present this problem to the city officials.

W. T. PIPER
President
Piper Aircraft Corporation
Lock Haven, Pa.

# Accounting for *All* Police Tickets

By PERRY W. RODMAN
City Comptroller
Bridgeport, Conn.

PRACTICALLY every city in the United States has some traffic problems: large numbers of cars trying to park in the business district, the need to provide merchants with space in which to load and unload goods—and the fixing of traffic tickets. Of course, a man who takes advantage of his friendship with a policeman by parking in a restricted zone is no friend of that policeman; yet, it works out 99 times out of 100 that the parking is either ignored or if a ticket is put on the car, that ticket will be destroyed before it reaches the traffic board or police headquarters. We had recognized this situation in Bridgeport for some time, but rather than force an unpalatable order on many of the patrolmen, we decided to take away from them the responsibility for tickets. We anticipated that if this responsibility were taken away from them, at least 75 percent of the abuse would cease.

With our present set-up each ticket represents a minimum of $1.00 fine. These tickets, printed in the City Printing Office, are turned over in numbered blocks to the Police Department, and the control of these tickets is kept in the Comptroller's Office. All numbers within the blocks must be accounted for; there can be no exception. Therefore, if a person complains bitterly to a policeman that his car has been tagged, the policeman can say that that is out of his jurisdiction, that if he wants the ticket cancelled he must apply either to the Superintendent of Police or the Comptroller. Tickets are distributed from headquarters by clocks to precincts and from precincts to individual patrolmen.

Running a listing on police tickets is a good job for the collator. A serial set of numbers 1 to 999 is used. These cards are collated against cards which have been punched for the tickets turned in. The missing numbers are automatically ejected by the collator. These are in turn listed and this list is sent to headquarters with the demand for an explanation as to what has happened to the numbers shown as not used. If the ticket becomes worn or mutilated by being carried in a man's pocket, he turns this ticket in anyway so that the number can be accounted for. This system has done away with a good deal of ticket fixing. I cannot honestly say that it has conquered it 100 percent, but it has certainly made a tremendous improvement. Reasonable cooperation from the Police Department makes this system very effective.

This car has been tagged for violation of restrictions on PARKING or State Auto Law as indicated below.

| | | VIOLATION OF (Check) |
|---|---|---|
| | Time Limit O | |
| No. 1 PARKING VIOLATION | In No Parking Area O | NO. 1 |
| No. 2 STOP SIGN. | Failure to Stop At O | NO. 2 |
| No. 3. SIGNAL LIGHT. | Failure To Stop At O | NO. 3 |
| No. 4 STATE AUTO LAWS: | Parking within 10ft. of hydrant O | NO. 4 |
| | Parking other than near curb O | |
| | Other violations O | ON MAIN TAG |

Form 1167

POLICE DEPARTMENT
BRIDGEPORT, CONN.

No. K-56

NAME.....
RESIDENCE.....
REG..... OPER. LIC. NO.....

REPORT AT ONCE TO OFFICER IN CHARGE AT POLICE HQTS. OR PRECINCT STATION

Payment without appearance in court authorizes the clerk of the court to enter a guilty plea.

DATE.....19..... PATROLMAN NO.....
(Over)

Reg. No.....
Make.....
Time Tagged.....
Place.....
Ptlm. No.....
Date.....19.....

COMPTROLLER'S COPY K-55

CITY OF BRIDGEPORT
POLICE DEPARTMENT

Date 11-16- 1943
Received of Harrell
Residence 430 Maple St.
Reg. No. 2X508 Oper. Lic. No.
Ticket No. 577074 Patrolman No. 93
AMOUNT $1.00
PARKING, VIOLATIONS
STOP SIGN, FAILURE TO STOP AT
SIGNAL LIGHT, FAILURE TO STOP AT
OTHER VIOLATION

WAIVER

By the payment of the above amount, I, the within named defendant, hereby waive the filing of a complaint and issuance of process, also waive a trial by court, and admit the violation as described above:

Received the above payment
No. BB 00602 Officer in Charge

*A person receiving a tag, shown here, pays his fine at Police Headquarters. A slip is made out at headquarters using a Standard register, and the duplicate of this slip is sent to the Comptroller's Office. The original, reproduced here, is the payer's receipt, the triplicate being kept at headquarters. The body of the ticket stays on the car; the stub is turned into headquarters.*

# New Taste and Odor Control Process

***The new chlorine dioxide treatment of water is proving successful in removing tastes and odors***

A METHOD of treating water to remove tasts and odor, particularly where "chlorphenol" tastes or algae are a problem, has been developed by The Mathieson Alkali Works, and has been described by John F. Synan, J. D. MacMahon, and G. P. Vincent, the men most responsible for its development. The process, which was tried originally at Niagara Falls, N. Y., is now being successfully used by a number of municipalities, namely, Bangor, Me.; Chicopee, Mass.; Greenwood, S. C.; Lockport and Tonawanda, N. Y. Other city water departments are anxious to use this effective new method, but, since the supply of sodium chlorite, from which chlorine dioxide is generated, is limited, it has been impossible to supply it to all who would like to use it. It is expected that this new method will be applied to solve taste and odor problems for municipalities throughout the country as soon as the necessary chemicals are no longer needed for war purposes.

## Process

The process involves pretreatment with chlorine for disinfection, followed by treatment with chlorine dioxide for removal of tastes and odors. At Niagara Falls enough chlorine is first introduced during the pretreatment to maintain a residual chlorine of .4 to .5 ppm in the settling basin and .2 ppm under the filters. This residual is regulated simply by varying the chlorine feed. A dosage of 1.5 ppm chlorine is ordinarily sufficient to meet these requirements but may be increased easily when necessary.

The water is dosed with about 17 ppm of alum and allowed to settle for a period of three hours. After filtration, chlorine dioxide is added to the water in the clear well. Since chorline dioxide is too reactive to ship it must be produced at the point of use as needed. It is produced by the reaction of sodium chlorite with chlorine, as follows:

A sodium chlorite solution, containing 31 grams per liter of available chlorine (23.7 grams per liter of sodium chlorite), is fed by means of a metering pump into the discharge line of a Wallace & Tiernan chlorinator at the rate of 1.65 gallons of solution or .42 pound available chlorine per hour. The chlorinator is set to deliver two pounds of chlorine per million gallons or an equivalent of .25 pound of chlorine per hour at a pumping rate of 3 mgd.

To assure complete conversion of the sodium chlorite to chlorine dioxide an excess of chlorine is used and the reaction mixture is passed through a mixing chamber before entering the clear well. The chlorine dioxide dosage is maintained at a value of .5 to .75 ppm available chlorine.

The effectiveness of the new method of treatment in removing tastes and odors as compared with chlorination alone is indicated in the following table:

RESULTS OF TESTS ON RAW WATER TAKEN FROM THE NIAGARA RIVER

| | |
|---|---|
| No chlorphenol | 0 |
| Slight chlorphenol | X |
| Bad chlorphenol | XX |
| Very bad chlorphenol | XXX |

| Phenol Added (ppm) | Chlorine Pre-treatment (ppm) | Chlorine Dioxide ppm Available Chlorine | Taste |
|---|---|---|---|
| 0 | 2.5 | — | XX |
| 0 | 5.0 | — | XX |
| 0 | 10.0 | — | XX |
| 0 | — | 1.0 | 0 |
| .08 | 1.5 | — | XXX |
| .08 | 1.5 | 0.5 | 0 |
| .08 | 3.0 | — | XXX |

The chlorine pretreatment is used for disinfection even though chlorine dioxide is an excellent bacteriacide. However, chlorine dioxide destroys phenols, algae, and other contaminants at the same time it attacks bacteria. Purification of polluted water, therefore, requires more chlorine dioxide than chlorine, so that the latter is more economical for disinfection.

F. W. Chapman, Superintendent of the Greenwood, S. C., Water Works reports the following:

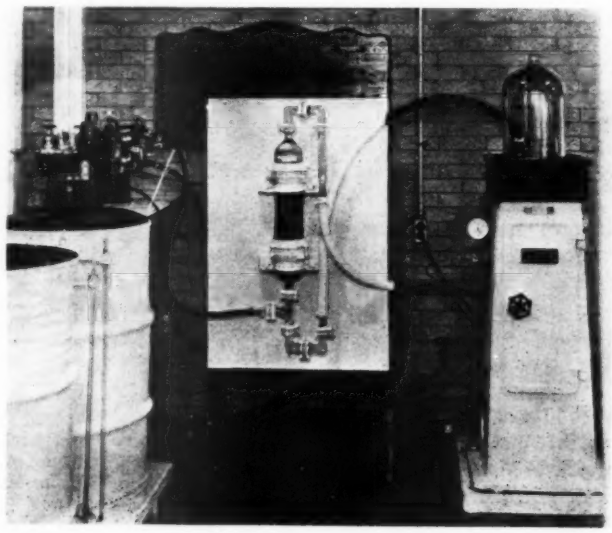
"The Greenwood raw water supply is pumped from a shallow pond on a small creek. Taste and odors caused by organic matter have always been present and we have never been able to satisfactorily eliminate it.

"The problem was further aggravated when two years ago an army flying field was constructed with one runway draining into our water-shed. There evidently was a vein of manganese ore cut when this runway was built, since we now have far more manganese in the water than we had before it was built.

"At first we were unable to oxidize this metal. Later, when we tried using pre-chlorination and post-chlorination with chlorine dioxide gas, as at Niagara Falls, we very successfully eliminated all tastes and odors and all signs of manganese.

"At times, particularly in the spring, the organic matter in the raw water increases rapidly. At such times, the only precaution necessary is to increase the doses of chlorine and chlorine-dioxide sufficiently to oxidize the tastes and odor. The usual doses we use are 1.5 ppm chlorine and .5 ppm equivalent of chlorine dioxide. The largest dose we have used was .5 ppm of chlorine and 1 ppm equivalent of chlorine dioxide gas.

"All organic deposits in the mains also are being oxidized slowly as indicated by a drop in the residual throughout the distribution system.



*The apparatus used for the chlorine dioxide treatment at the Niagara Falls water works.* LEFT: *the sodium chlorite solution tanks and beyond, the chlorite pumps.* CENTER: *the glass mixer in which the solution containing chlorine dioxide is generated.* RIGHT: *Wallace & Tiernan chlorinator.*

"We are very much pleased with the results obtained by the use of chlorine dioxide gas and feel that we could not do without it."

L. J. Hooker, Superintendent of the Lockport, N. Y., Water Works reports:

"We have been using chlorine dioxide for some time in treating our Niagara River water supply. This control process removes all tastes and odor in a satisfactory manner, and I would not hesitate to recommend it to any water department having a taste and odor control problem similar to ours."

A. W. Read, Superintendent of the Bangor, Me., Water Department reports:

"The Penobscot River, the source of our raw water supply, furnishes a water which varies widely in temperature, color, pH, and in taste and odor. The river has a drainage area of 55,000 square miles and flows from 3,900 cfs to an excess of 100,000 cfs at high water mark. The stream receives the sewage wastes from three small cities and wastes from numerous mills which contribute chiefly sulphite materials. In addition the water contains a variable algae and organic content giving it a color ranging from 38 to 120.

"The sodium chlorite treatment had been used, and successfully, for a three months' period, producing a tasteless and odorless water. At the present time a flash chlorine residual of from .2 to .8 ppm is being maintained on the water leaving the treatment plant in an attempt to clean the distribution system. This naturally requires more sodium chlorite than would be necessary under normal operation. This treatment process has proved more efficient than the carbon treatment used previously, although the cost is estimated to be $2 more. It removes all taste and odor from our type of water when used in sufficient quantity. We will be able to assess the effectiveness of this process when it has been in use for a year."

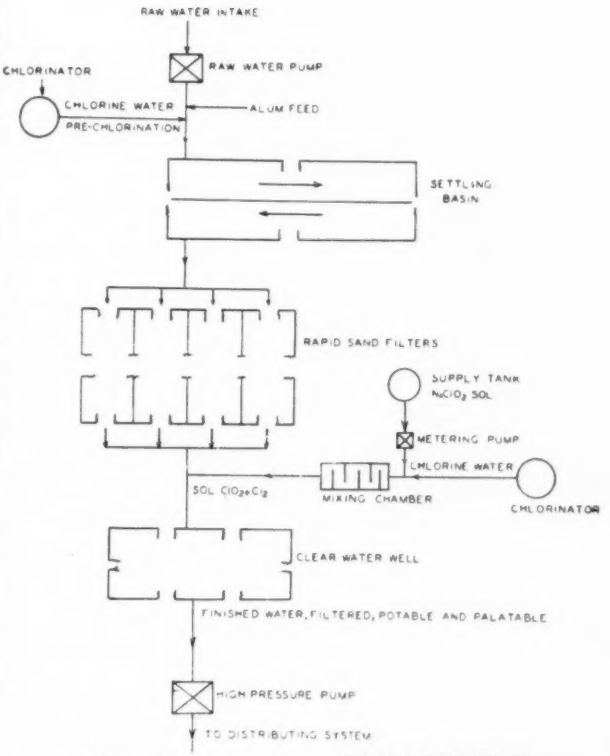
Edward J. Lavallee, Chemist of the Chicopee, Mass., Water Department reports:

"Our problem at Chicopee has not been chiefly due to phenols or algae, but to hydrocarbons and to decomposed organic matter. The basic taste and odor is of a musty or moldy nature and often is aggravated by hydrocarbons producing a kerosene-like taste and odor.

"The chemical treatment we employ is similar to that used in other cities, namely: pre-chlorination consisting of a dosage sufficient to maintain a residual of from .1 to .2 ppm through the filters, a 10 to 25 ppm dosage of alum, activated carbon applied to the effluent of the filtration basins in amounts varying from 3 to 8 ppm, 9 to 12 ppm of lime is applied to the clear water well. At this point also the chlorine dioxide treatment consisting of a dosage of from .5 to 1 ppm available chlorine is applied.

"This treatment has improved our final effluent and, while not completely eliminating taste and odor, it has reduced them sufficiently to render them inoffensive. During three and one-half months of operation with the chlorine dioxide treatment we have not had a single complaint due to chlorine or chlorine compound although we maintain a chlorine residual of at least .2 ppm throughout our distribution system. The bacteriological analyses show few colonies formed on either the 37 degree C. plate or on the 20 degree C. plate."

As these reports indicate, this method is providing the cities using it with a satisfactory water supply all year round. Break-point tests indicated that the break-point chlorination method has been used at Niagara Falls, 15 ppm chlorine would have have been required at some periods and on at least one occasion the plant would have been unable to handle the condition at all. In addition to supplying a palatable water, this new system of treatment has been found to simplify plant operations when its use has become established.




FLOW DIAGRAM

*The point of application for the chlorine dioxide treatment is shown in this flow diagram of the treatment process at Niagara Falls, N. Y.*

# Chisholm, Minn., Approves Post-War Central Heating Plan

DETERMINED to free their city from smoke and soot and to solve forever their domestic, commercial, and industrial heating problems, the Chisholm City Council has just passed an ordinance granting a franchise for furnishing central steam heat and electric power to the entire city from a cooperatively owned plant. The plan was considered doubly attractive because it provides an ideal civic improvement project for post-war construction and employment.

The franchise, awarded to John J. Dwyer of Duluth, authorizes the construction of an adequate steam and electric generating plant with the necessary underground heat distribution lines and electrical circuits, just as soon as war production schedules permit release of materials.

Steam service will be made available to residential, commercial, and industrial buildings. It can be adapted to existing warm-air, hot-water, or steam-heating systems. It was brought out at council meetings that this would completely eliminate the need for individual furnace stoking and ash handling, and would abate a smoke nuisance, assuring a cleaner, more healthful community. Preliminary estimates indicate that the over-all fuel consumption will be reduced approximately 25 percent. Another benefit considered was the extra basement space to be obtained by removal of individual furnaces. It was also pointed out that new homes could be built without expense of basement excavation and construction.

The city is now served with light and power from an extensive power transmission system. Under the new plan, the citizens of Chisholm will purchase heat as well as electricity, gas, and water from a central source.

Central steam heating is in use today in downtown and industrial areas of most of our large cities. In some cases lines have been extended to bring its benefits to residential areas. However, Chisholm is the first American city to enact legislation to provide city-wide central heating as a post-war project.

JOHN GONICK, JR.
Mayor
Chisholm, Minn.

## MAYO FESLER—
## Civic Lamplighter

IN the passing on May 6 of Mayo Fesler, the cause of civic progress has lost an outstanding community leader. Born in Morgantown, Ind., in 1871, and working his way through the University of Chicago by selling papers and lighting street lamps, Mr. Fesler soon turned to lighting the lamps of civic progress—and incidentally, he lived long enough to see in his adopted city of Cleveland some of the best examples of modern street lighting to be found anywhere.

But strongly as he believed in the physical improvement of cities, it was to the efficiency of local government and to civic organization leadership that he devoted more than four decades of active and efficient service, during most of which he served as Director of the Citizens League of Cleveland.

Perhaps Mr. Fesler's practical idealism was best summarized in the following statement by him that first appeared in the program of a meeting of the City Club of Cleveland, on June 5, 1915.

THE CITY OF THE FUTURE

A city, sanitary, convenient, substantial;
Where the houses of the rich and the poor are alike comfortable and beautiful;
Where the streets are clean and the sky line is clear as country air;
Where the architectural excellence of its buildings adds beauty and dignity to its streets;
Where parks and playgrounds are within the reach of every child;
Where living is pleasant, toil honorable, and recreation plentiful;
Where capital is respected but not worshipped;
Where commerce in goods is great but not greater than the interchange of ideas;
Where industry thrives and brings prosperity alike to employer and employed;
Where education and art have a place in every home;
Where worth and not wealth give standing to men;
Where the power of character lifts men to leadership;
Where interest in public affairs is a test of citizenship, and devotion to the public weal is a badge of honor;
Where government is always honest and efficient, and the principles of democracy find their fullest and truest expression;
Where the people of all the earth can come and be blended into one community life;
And where each generation will vie with the past to transmit to the next, a city greater, better and more beautiful than the last.

## EDITH ELMER WOOD—
## Housing Prophet

THE passing of Edith Elmer Wood on April 29 recalls to the editors of THE AMERICAN CITY the publication in this magazine 22 years ago of an article by her on the garden suburbs of Lyons and Rheims, as examples that American cities might emulate; and of her prophetic discussion of "Slums and the City Plan" in the issue of August 1929.

In the latter article, which antedated and helped to prepare the way for the public housing movement in the United States, Dr. Wood's concluding advice was:

"Let us take heed of the half-century's experience in slum clearance available for our study across the water. And let us recognize from the start that slum clearance will fail of attaining its principal objects—better health and better homes—if it does not provide new accommodations for those whom it displaces, and at rentals they are able to pay. This cannot be done on the basis of private enterprise for commercial profit, but in view of our much-heralded prosperity, it ought to be possible to do it without subsidy. If not, our people might still be wise to tax themselves for good housing instead of for hospitals and jails."

During the following decade—when the soundness of this advice was becoming increasingly recognized, Dr. Wood developed with exceptional clarity the case for slum clearance as a public responsibility. But she was not one of the extremists who would depend wholly on governmental initiative and public funds for solving the housing problem. In her 1940 monograph, "Introduction to Housing Facts and Principles," published by the United States Housing Authority, she says:

"It should be clear that private enterprise will have at least as large a field as it ever had, and that the extensive no man's land between the two fields should stimulate the inventive genius of both camps."

This very stimulus, of which now there are nation-wide evidences, gives hope that future writers will not need to reiterate the solemn warning with which Edith Elmer Wood concluded this 1940 monograph: "Either democracy will destroy the slums or the slums will destroy democracy."

## What Twenty-nine Towns in Vermont Have Done to Billboards

ON March 6, 1945, at their annual town meetings, 29 towns in southern Vermont voted upon a proposal to prohibit all advertising signs having an area of more than 40 square feet over all, the regulation to go into effect immediately. The restriction does not affect business signs which pertain exclusively to the property on which they are located, its sale, its rental, or to business conducted thereon. The standard size of the commercial poster-boards is 300 square feet (12 x 25) and of "bulletins" (the painted boards) is 600 square feet (15 x 40).

Of the 29 towns that considered the proposal, 27 voted in favor of limiting the billboards to 40 square feet in area. The proposal was lost in only two towns, in one of which an influential politician rents land to a billboard company. Previously two towns had adopted the same restriction.

The votes were taken at the instance of the Vermont Association for Billboard Restriction of which Horace Brown, landscape artist and former member of the Vermont Legislature, a resident of Springfield, Vt., is the chairman. While in the legislature Mr. Brown succeeded in passing the Vermont statute which eliminated more than 50 percent of the rural billboards in the state.

All the towns which have adopted the present restriction lie along the main highways, so that the good effect of the vote will be much greater than the number of towns involved. Of the more than 200 remaining towns in Vermont many—perhaps half—have no billboards, because of their rural character and location away from the more travelled roads. But Mr. Brown and others interested in unspoiled highways and landscapes look forward to the adoption of similar restrictions by other towns in which the matter has not yet been put to a vote. Even the two towns which have voted to tolerate large billboards for the present may reconsider later, not wishing to become conspicuous among Vermont towns for bad taste.

ALBERT S. BARD
Counsel, National Roadside Council
119 E. 19th St.
New York 10, N. Y.

# To Salvage Some Permanent Good Out of Wartime Community Expansion

By W. K. PEERY
Executive Director, Housing Authority of Vancouver, Wash.
Chairman, Disposition Committee of the National Association of Housing Officials

VANCOUVER, Washington, like many other small communities throughout the nation that have experienced tremendous public war housing developments, has been concerned for many months over what is going to happen to the land and the permanent community buildings when the war is over and this temporary federal housing has been removed.

The problem is of particular concern to Vancouver because most of its wartime expansion has taken place in public housing located on property outside the city — property that amounts to as much land as the whole community occupied before the war. Before the war Vancouver, including its suburbs, had a population of 24,000, while today 62,000 more people are crowded into the same area. Before the war there were 7,500 private dwelling units here. Today there are 9,000 private dwellings, plus 1,000 permanent public housing units, 11,350 temporary public housing units, and 5,000 dormitory units, all federally owned.

*McLoughlin Heights War Housing Project, Vancouver, Wash. This project, containing over 6,000 dwelling units on a 1,000-acre site, is believed to be the largest housing project of its kind in the world.*

When the temporary housing is removed, as provided in the Lanham Act, some 1,800 acres of land will be ready for disposition—land that has been improved with water, sewer, and electrical distribution systems, streets, and sidewalks. It forms a semi-circle that neatly fences the city inside its present limits, while the Columbia River bounds the city on the south. This land is the most desirable in the area. Vancouver's expansion beyond its present limits will have to be made on this property. The city's proposed recreational development, its educational expansion, and its residential growth ten years hence all must use this property. That is why our civic leaders are wondering how it will be disposed of; whether it will be dumped on the market at one time; whether it will be sold to the highest bidder in one or a few parcels.

## Analysis and Recommendations

Unable to get a commitment from federal authorities as to their plans for disposition, the community decided to face the issue itself, and make its own "grass roots" recommendations. At a meeting of city and county officials, school authorities, and planners called by the Housing Authority, a committee was appointed to make a thorough analysis and a comprehensive report. Working with them was a nationally known planning consultant who had been retained previously by the city to draw up a master post-war plan. The result of their study was a brochure entitled *Vancouver's Plan*, which was published in March 1945. Briefly, these are its proposals:

1. That the Federal Government designate local housing authorities as disposition agents to release the land suitable for home sites (1,000 sites in Vancouver's case) for sale at established prices as the community needs it for orderly development.

2. That the 1,000 permanent units be sold to the Housing Authority and be operated as low-income public housing, or that part of them be sold to individuals if the low-income need does not take them all.

3. That areas be made available for a municipal golf course (our only course was torn up to make way for a housing project), a cemetery, a tuberculosis sanatorium, a fair grounds, an experimental farm, a new suburban high school, and other public uses.

4. That certain community and school buildings be made available to the local junior college for a post-war campus and for a trade school, and that other community facilities be held in reserve for public use when the land surrounding them is redeveloped into residential areas.

## To Avoid Community Disaster

We feel that it would be disastrous to dump all this publicly owned land on the market immediately after the war. It would depress city real estate values for years. It would make this area a green pasture for real estate speculators. It would give the community no assurance that its plan for land use and orderly post-war development would be realized. The future of our community is something we cannot afford to leave to a federal agency operating from a far-distant office without regard for our particular needs.

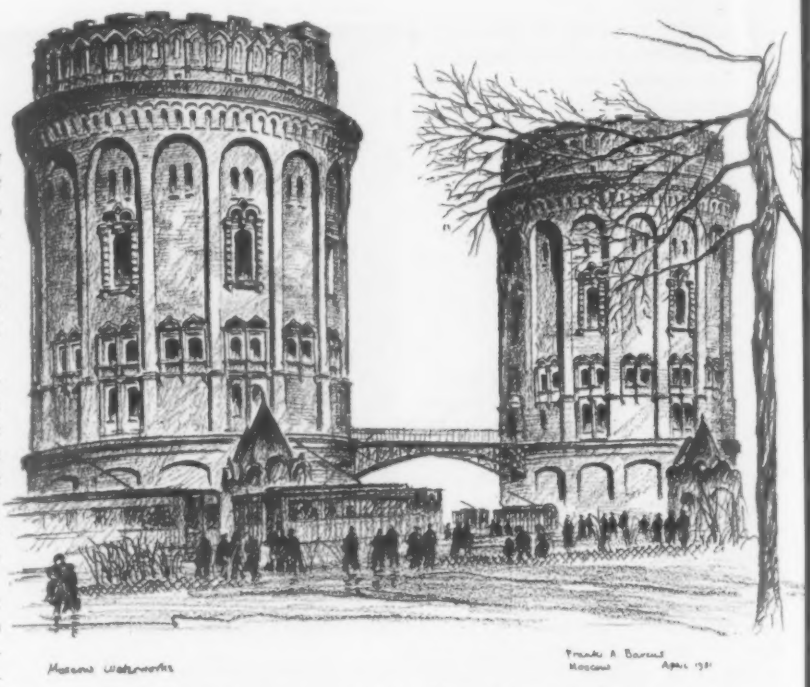
We are not too concerned with the method or machinery of disposition, provided the local community can make the decisions on land use

(Continued on page 125)

# Moscow Water System

***Its problems are similar to those confronting water works departments in the United States, but vastly different methods have been used in solving them***

By FRANK BARCUS
City Plan Commission
Detroit, Michigan




*The two water towers of the Moscow water works system*

THE narrow channeled Moscow River serves as the major source of water supply for Moscow, Russia, a city of four million people. The water from this source is comparable in turbidity to that of our own muddy Mississippi River, and sometimes contains as much as one pound of solids per 12 gallons of water.

The river is protected from pollution for a distance of 50 miles above the city intake. All villages have been removed from the banks of the river and no pasturage or public use of the bank is permitted on either side of the river for that distance. (All that was needed to accomplish this was a governmental decree.)

All water services in Moscow are metered, but there are only 16,000 meters compared to Detroit with a million eight hundred thousand population, and 322,652 service connections. The overwhelming quantity of multiple dwelling units in Moscow accounts in part for the small number of meters. Moreover, the per capita consumption of water in Moscow is only 26 gallons as compared with Detroit's 135 gallons.

### Moscow Dates from the Middle Ages

Moscow was founded about the year 1150. Its water system dates back to 1780 when water from several large springs ten miles from the city was collected and conveyed in a brick aqueduct to a distributing point in the city. This system served until 1825 when the aqueduct broke. Later, a pumping station was built and the first cast iron pipes were laid to carry water to a tower in the city which supplied the head for the distributing fountain.

In 1860 a second pumping station was built and 30 miles of cast iron pipe were laid. During the next 40 years the well system was further developed and two imposing towers were built.

As the city grew the wells were found to be inadequate and the city engineers turned to the Moscow River as a source of supply. The first filtration system was built in 1903. It consisted of an intake structure, pumping station, sedimentation basins, slow sand filter and reservoirs. In 1940 this plant handled 60 mgd. The well system, which had been modernized, furnished another 7 mgd. Detroit's average daily pumpage is more than 280 mg and it had a maximum pumpage one day, on June 26, 1943, of 451,110,000 gallons. The distribution pipes in the Moscow system are all cast iron of Russian manufacture and total about 50 miles as compared with a total of 2,950 miles of pipe in Detroit's distribution system.

## Assessing White Elephants

LEO P. HINDS, Chairman of the Board of Assessors of Portland, Me., speaking to the New England Conference on Assessment Administration on the difficulty of assessing residences of the "palatial" group, said: "No fairer method can be used in arriving at a tax value of a luxury home than to make an examination of plans or of the structure itself with an architect, builder, or building inspector to determine its maximum usefulness after such alterations as are permissible can be effected. Such examination can determine replacement costs of a completed structure based on class and quality of construction not more elaborate than found warranted in competing structures built more recently. A depreciation based on age, and at a rate consistent with the degree of maintenance observable in the building itself or at the rate used in neighboring buildings, may then be deducted from the replacement cost. A further allowance should be made for the absence of such additional features—like partitions, new plumbing, heating, or electrical units—as are required to bring the building to maximum usefulness. The result should represent a fair residual value of the building. This method, of course, is not applicable to structures which are not permitted to be altered; in such cases obsolescence is more pronounced."

# Building Code Modernization

## *Aid Available from the Pacific Coast Building Officials Conference and the Uniform Building Code Association*

By HAL COLLING

**Managing Secretary, Uniform Building Code Association and Pacific Coast Building Officials Conference, Los Angeles.**

THAT most cities operating under building codes six years or more old are in serious need of new building ordinances is a fact increasingly recognized. A building code is a highly technical document, but aids available to municipal officials make the obtaining of a workable code not so difficult as it may sound.

The Pacific Coast Building Officials Conference has responded to this national need by continuing to maintain its "Uniform Building Code" as a living document during the war years. The 1943 edition was brought from the press in June of that year, and the 1946 edition is now in the making.

The Pacific Coast Building Officials Conference Committees have recently completed reports for consideration at the next annual meeting in preparation for publication of the new edition. Of particular significance in this year's Code Changes Committee deliberations was a complete restudy of Chapter 24, covering masonry construction. A suggested redraft of this chapter appeared in the January issue of *Building Standards Monthly*. Committees went into session during the months of February and March, and a new suggested draft of Chapter 24 appeared in the April issue of the magazine. This subject will have continued study by the Masonry Subcommittee and the Code Changes Committee and will be acted on at the next meeting.

Other studies of national interest include new provisions covering administration, prefabrication, and the closely related subject of adhesives, as well as revisions to chapters covering stairs and exits and motion picture machine booths, and many individual revisions.

How well qualified, it may be asked, is the Pacific Coast Building Officials Conference to sponsor this important work? Questions and answers regarding the Conference and the Uniform Building Code Association have been prepared from answers to letters of inquiry received from cities needing this assistance. From these 28 questions and answers, as published in the March 1945 issue of *Building Standards Monthly*, the following excerpts may be of special interest to readers of THE AMERICAN CITY:

***What is the purpose of the Pacific Coast Building Officials Conference in maintaining the Uniform Building Code?***

1. To furnish in one book uniform fundamental requirements necessary to enable a city to provide building regulations in accordance with modern methods and at the same time insure public health, safety, and welfare.

2. To assure the maximum amount of safety to life from fire, structural, and exit hazards, without unnecessary cost.

3. To establish uniformity in building code practice and building department procedures throughout the United States.

4. To reduce city fire insurance base rates to the lowest practical minimum.

***Is the project practical?***

Since the Uniform Building Code is founded on nationally accepted building practices and incorporates the most up-to-date information available in understandable form and language, it has proved to be a practical answer to the building code problem in the 375 cities and counties now using it as their building standard.

***How will adoption of the Uniform Building Code affect the cost of building in a city?***

Where no building laws existed prior to its adoption, the Uniform Building Code will increase the average level of building costs to a degree, since it is based upon minimum requirements to insure general safety. Adoption of the Uniform Building Code in cities which are already operating under a fairly complete code has a tendency to lower average building costs without sacrificing the necessary safety. This is due primarily to the fact that many existing codes are what is known as "specification codes," and the Uniform Building Code is a set of minimum standards based on performance.

***Why did the Pacific Coast Building Officials Conference decide to expand its activities into the Middle West and East?***

Ever since the Uniform Building Code was compiled, and particularly since 1937, there has been an increasing demand from cities in all sections of the United States for use of the Uniform Building Code and for the assistance of the Conference in placing the Code in effect legally. The Uniform Building Code is the only ordinance compiled and maintained by any building officials' organization.

***How is the Uniform Building Code maintained?***

The governing body of the Pacific Coast Building Officials Conference is the Executive Board, which in turn appoints a managing-secretary and functioning committees for the maintenance of the Uniform Building Code. The key committee is known as the Code Changes Committee, composed of seven Active Class A (city) members, most of them architects and structural engineers, serving under a general chairman. Each member of this Code Changes Committee is in turn chairman of a subcommittee whose studies are assigned by the main Code Changes Committee. It is the purpose of the Code Changes Committee to keep the Uniform Building Code currently up to date, and the structure of the subcommittees is such as to guarantee fairness to all building materials and products.

The voting membership of the subcommittees is composed of Active (city) members whose designated representatives are building officials.

Each subcommittee has an advisory council consisting of building officials, architects, structural engineers, and material representatives. It is the intent of the Executive Board and Code Changes Committee in appointing these councils to include all interested material groups.

***How do suggested revisions become incorporated in the Uniform Building Code, latest edition?***

Such revisions are submitted by the proponent to Conference Headquarters and printed in the subsequent issue of *Building Standards Monthly*. Following study by the subcommittees and consideration and recommendation by the main Code Changes Committee, these suggested revisions are reprinted in revised form in *Building Standards Monthly* 30 days before the annual business session, usually held in October. Voting on these printed revisions is completed at the annual session by active members of the Conference only. Every effort is made to assure open and fair consideration and action on all changes. The Conference does not countenance passage of code revisions which foster special interests.

***What is an Active Class A membership worth to a city?***

Recent costs indicate $25,000 to $50,000 as the amount necessary for a city to develop a new building code or completely overhaul its existing code. On top of that expense would be the annual maintenance service for keeping that code up to date. This entire service is available through the Pacific Coast Building Officials Conference and the Uniform Building Code Association to each adoption city at a nominal fee based upon population, starting with $25 for cities under 5,000, the highest fee being $200 for jurisdictions with a population over 600,000. The average is $75 for each Active Class A member city.

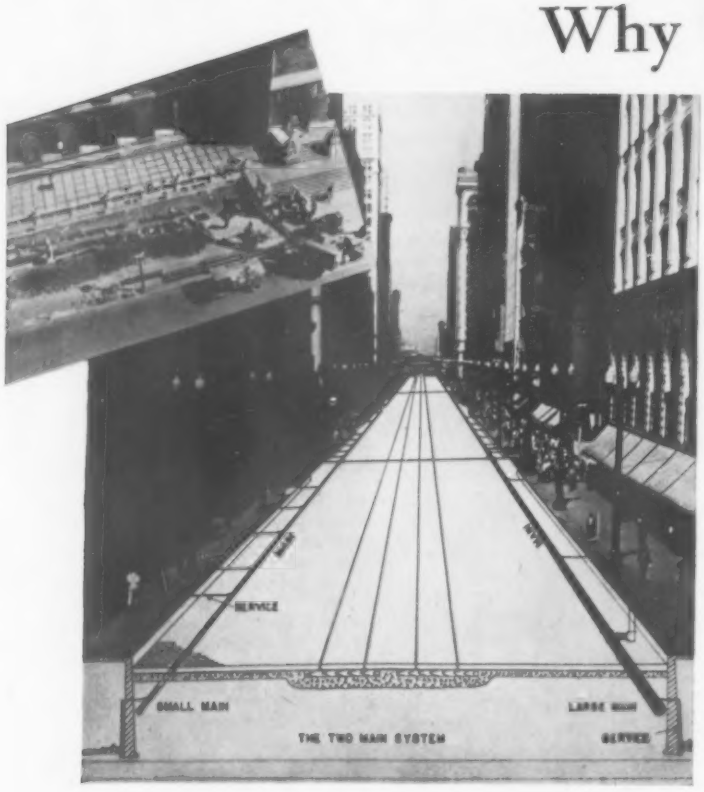
***What is the Uniform Building Code Association?***

The Uniform Building Code Association is an organization affiliated with the Pacific Coast Building Officials Conference with membership open to all building officials' organizations and cities throughout the American continent, as well as components of the construction industry.

***Are eastern city representatives eligible to become members of the Executive Council of the Uniform Building Code Association?***

Yes, membership on the Executive Council is open to all members of the Uniform Building Code Association. Appointments to the Executive Council from eastern territory will be made at the annual meeting of the Executive Board of the Pacific Coast Building Officials Conference, scheduled to be held in October.

# Why Not a Two-Main Water System for Your City




UPPER LEFT: *One side of a two-main system being installed in a grass plot beyond the curb.* PHOTO-DIAGRAM: *A method of installation where sub-sidewalk space is used for business purposes.*

***More adaptable to modern street construction, this method has many advantages over the old one-main system.***

CITY engineers planning post-war improvements for their water departments are now giving wide consideration to the merits of installing a water main on both sides of the street. Why? Because the years of experience now behind this method of installation have shown that in the long run it has many advantages over the laying of a single main down the middle of the street. This is especially true for streets having a width of more than 70 feet from property line to property line.

Twenty years ago after the close of World War I, water works superintendents were just beginning to appreciate the advantages of having a water main on both sides of the street, and since that time the logic and the merit of the two-main system has been widely accepted.

In this modern water distribution system, a main is located on each side of the street between the curbing and the sidewalk within the parkway space, where it is readily accessible for the installation of service taps and for making repairs when necessary. The two pipes may be of the same size or one may be larger than the other, in which case the fire hydrants are attached to the larger one along with the service connections for the houses on that side of the street. A smaller main of the proper size to serve the customers is then installed on the other side. The relative size of these two mains will depend upon the size of the city and the type of buildings served. The larger main, however, will of necessity have to be big enough to supply the fire hydrants for the area. The main on the other side of the street may be any size from 2 inches in diameter on up. Hundreds of miles of 2-inch cast iron pipe have been installed in southwestern cities for this purpose alone.

A post-war planner after World War I might easily have referred to the two-main system as a water superintendent's "pipe dream," because on first glance this system would appear to involve double the expense. A close engineering study will show that for streets of 70 feet in width or more, which includes most city streets, there will be an actual saving in construction cost by the installation of a main on each side of the street with short service stubs, as against the cost of a single main down the center of the street with long service lines extending to property lines. The accompanying table shows the length of trenches necessary to excavate for installing mains and services on a 1,000-foot block, assuming lots and streets of various widths.

FEET OF TRENCH PER BLOCK FOR MAINS AND SERVICES

*1,000-foot Block*

| Street Width | 30-ft. Lots One main | 30-ft. Lots Two main* | 40-ft. Lots One main | 40-ft. Lots Two main* | 50-ft. Lots One main | 50-ft. Lots Two main* |
|---|---|---|---|---|---|---|
| 80 ft. | 3,640 | 2,264 | 3,000 | 2,200 | 2,600 | 2,160 |
| 66 ft. | 3,178 | 2,264 | 2,650 | 2,200 | 2,320 | 2,160 |
| 55 ft. | 2,815 | 2,264 | 2,375 | 2,200 | 2,100 | 2,160 |

* 4-ft. stub services.

Some cities do not include the cost of services when estimating the cost of a new water project because the service pipes are installed by plumbers and are paid for directly by the property owner. This may be true at the time of installation, but it must be remembered that it is the property owner or the taxpayer who ultimately pays the total cost of the entire water system whether it be mains, services, fire hydrants, or any other appurtenance. It makes little difference whether the actual payment is made to the plumber

or to the city treasurer in the form of annual taxes, or a small increase in the monthly water bill.

The popularity of universal automobile transportation at increasingly high speeds has demanded that new methods of water distribution be used to insure a high quality, smooth surface roadway that is free from the irregularities due to frequent patching. This has greatly accentuated the adoption of the two-main system. State highway engineers, recognizing this need, soon demanded that all city streets traversed by state superhighways be provided with a main on each side of the street. This was for the protection of the motoring public and also for the workmen involved in the actual construction.

The American Society of Civil Engineers incorporated the two-main system of installing water and gas mains in their brochure on proper methods of design for city streets. This method of installation also reduces the number of leaks and unaccounted for water losses throughout the system because service pipes are not installed until the buildings are actually under construction.

In former years when the one main was installed down the center of the street it was common practice to extend service pipes from this main to both properties before the pavement was installed. This meant that many of these services were never actually used, or at least were not used for several years, until the street was 100 percent built up. One midwestern town of about 10,000 population reports that it is losing over 50 percent of the daily pumpage because of the large number of unused service connections that were installed under pavements and to which houses have never been connected. Often the street is re-zoned for commercial buildings, schools, churches, playgrounds, etc. These larger buildings then require the installation of a cast-iron pipe to serve an area of several lots instead of the ¾-inch domestic services as originally installed. These unused services then become a constant source of maintenance and leakage.

The two-main system also saves time for realtors developing new subdivisions. The installation of the water mains need not hold up or delay paving operations. Pipe can be laid either before or after the placing of the pavement, since both mains and service pipes are located in the parkway.

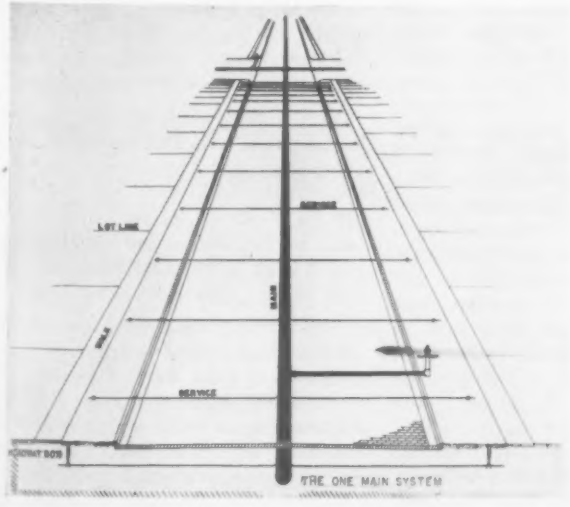
The new industry of air conditioning has required the installation of many new services of large diameter. With a main on each side of the street these services can be installed in the business district without delay or serious hazards to the workmen, or to automobile traffic. The two mains give better pressure with a larger supply of water. Air conditioning may create unexpected demands on the water system in the future. It offers a good opportunity for the installing of additional mains on streets which were constructed years ago by the old one-main system.

## Used Widely

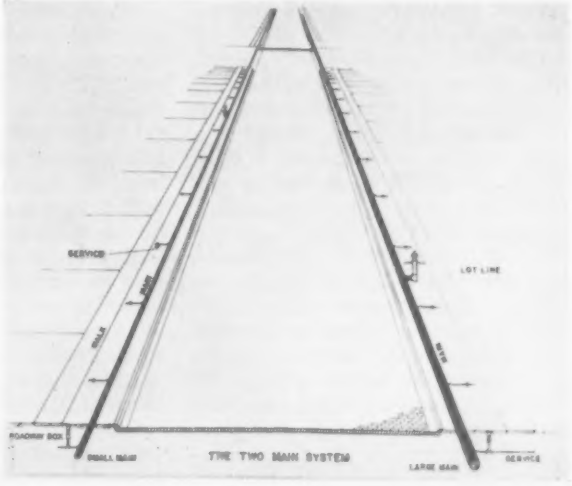
Cities of such prominence as Cleveland, Detroit, Los Angeles, New Orleans, New York, Philadelphia, Boston, Chicago, St. Louis, Dallas, Beaumont, and Tampa have made extensive use of the two-main system. Chicago has 170 miles of streets served by the two-main system. They first started two-main installations back in 1910. A recent survey of water works superintendents throughout the country has shown the plan to be gaining widespread consideration and adoption. The smaller towns and cities also realize that their traffic conditions may soon approach those of large cities due to the installation of super state highways passing through them.

The advantages of the two-main system may be briefly summarized as follows:

1. It does away with a great majority of all trenches, ridges and other irregularities which mar paved streets and cause danger to motorists.
2. It eliminates many traffic tie-ups, interruptions and detours due to laying, extending, replacing or repairing water mains under paved streets.
3. It saves money for property owners not only before streets are laid but afterwards—for it lowers taxes made necessary by street repairs caused by pipe operations.
4. It eliminates the money wasted by installing unused service connections.
5. It gives additional main capacity that may be necessary because of occupancy changes, the development of air conditioning or other unforseen demands.
6. It usually offers a lower first cost except in the case of very narrow streets.
7. It minimizes the hazard of damage to mains from electrolysis and vibration due to traffic.
8. It prevents delay in paving due to waiting for trenches to settle.
9. It insures better fire protection.
10. It guarantees a lower maintenance cost in every case.




*One-main system laid in the middle of a street*




*Typical two-main system in residential sections*

# Digester Gas—Muncie Makes It Work

DIGESTER gas generated by the Muncie, Ind., sewage treatment plant does a man-sized job before Paul R. White, Superintendent, ever allows it to go on its way. It powers a blower, does a chore of pumping, it heats the digesters, and takes a turn at furnishing heat to the building.

According to Mr. White in a recent Indiana State Board of Health bulletin, the original plant design anticipated only enough digester gas to power a single 90 hp Worthington gas engine directly connected to a Roots Connersville blower and two gas-burning boilers for heating the digester.

ABOVE: *Looking north from the top of the digester. The final clarifiers are on the right and the aerators on the left.*

LEFT: *Aeration tanks in the front; sludge drying beds, beyond.*

BELOW: *Looking from the main building to the digesters. Final clarifiers at the left.*

However, after the digesters became filled and their operation had become stabilized, Mr. White noted considerably more gas being generated than he had expected. The plant produced an average of some 60,000 cubic feet per day, 40,000 of which were utilized and 20,000 wasted.

Consequently, he decided to put this spare power to work. After studying the raw sewage pumping requirements and the gas available, he selected a 50 hp Climax gas engine having arrangements for variable speed, directly connected to a 16-inch centrifugal pump. By proper flow control, he was able to vary the speed of the engine, depending upon the rate of pumpage required. This variation in speed effects a pumping capacity range of from 4 to 10 mgd. Any pumping requirements above this he meets by the original electrically driven pumps. All the pumps and motors in this plant are Fairbanks-Morse.

Since cooling water from the original engine that powers the blower runs through a heat exchanger and thereby furnishes heat to the digesters, two of which are primary and two secondary, it was a relatively simple matter to connect the cooling water from the new engine parallel to this heating arrangement and to supply additional heat to these digestion tanks. Heat from the exhaust gases also can be utilized by means of a heat exchanger, so that these two relatively small engines are able to furnish heat for the four digesters sufficient to keep them operating at optimum conditions in all but extremely cold weather. In such emergencies, Mr. White uses the gas-fired boilers to supply the additional requirements.

Substantially all the improvements were installed by regular employees except for a very limited amount of special work.

## Power Plants "Purchased Instead of Designed" Called Inefficient

INEFFICIENCY and costly troubles in many of the coal-burning power plants in this country can be traced to the fact that their component parts were "purchased" rather than designed. This opinion was expressed recently by J. E. Tobey, Director, Fairmont Coal Bureau, New York, before the Metropolitan Section of the American Society of Mechanical Engineers.

Mr. Tobey grouped the nation's larger power and heating plants into three categories: 10 percent at the top, functioning with high efficiency; 50 percent which do not burn any type of coal satisfactorily; and 40 percent which burn a restricted range of coals with varying degrees of satisfaction.

"Of all the mistakes made in the past in the design of boiler units," Mr. Tobey said, "the most common and most serious was the failure to allow a reasonable factor of safety in respect to ash fusion temperature. The fusion curve is going downward each year because of the faster exhaustion of limited reserves of higher fusion coals."

# Harnessing the Nation's Power for Community Welfare

By LELAND OLDS
Vice Chairman, Federal Power Commission

HARNESSING the nation's power may be interpreted two ways—in terms of the potential electric power available in our great river basins or in terms of the great spiritual power of a people cooperating to make their common life embody an ideal. And it is that spiritual power which generates great cultures and mighty civilizations.

The power issue today is not only one of the country's biggest issues, but it is also symbolic of the all-inclusive issue which faces our democracy as we move into the post-war era—the issue as to whether we as a people are going to build our social order on the moral foundations of cooperation.

## Need Multi-Purpose Basin Programs

Our answer on the larger issue, as well as on the part electric power will play in the solution of post-war economic and social problems, will depend in large measure on the understanding support which the people give to multi-purpose river basin programs carried out by valley authorities following the Tennessee Valley Authority pattern.

The valley authority principle, with the closely allied rural electric cooperative program, stands for economic as well as political decentralization. It stands for full utilization of our resources through cooperation to achieve that common objective, rather than exploitation for the primary object of individual gain. The TVA has been our greatest experiment in the adaptation of democracy to meet the challenge of a new mechanical era.

## Stride Toward Lasting Peace

It is my conviction that in helping to solve the economic problems of many lands, the TVA principle will also help the people of the world to make a longer stride toward lasting peace than can be achieved through the most perfectly designed machinery of international collaboration alone. For, at the same time that the carrying out of this principle reverses the trend toward economic and political centralization, it offers the people in hundreds of valleys the practical experience of working together for the common purpose of using their resources to assure a good life for all.

This experience of cooperative freedom rather than individualist bondage is bound to overflow into the broader relations among peoples. Basically, individual quest for profits and nationalistic quest for power go hand in hand.

There are two important principles involved in the right approach to harnessing the nation's power as a part of our river basin programs.

The first is an engineering concept, the multi-purpose development of our water resources—not single purpose projects for irrigation or navigation or flood control or reforestation or soil conservation or water supply or power, but projects designed to serve all purposes present in a given basin.

The second is an economic concept—the reduction of cost or price barriers which restrict the full use of available resources.

We have immense undeveloped water power resources which can be utilized if we apply these principles. Our roster of river basin projects, which have been studied and found favorable for multi-purpose development, offers the possibility of ultimately adding 100 million kilowatts to the country's present generating capacity, with an average annual output of more than 500 billion additional kilowatt-hours of electricity. That means our rivers, with their tributaries, can contribute to the nation's future power supply about twice as much new electric power and energy as the entire country used for all purposes last year.

In other words, the next generation can look forward to increasing the present use of electricity four, five, and even six-fold. For except in the Northwest, where perhaps 30 million kilowatts of water power represent a unique energy resource, the new hydroelectric power will be most economically associated with additional steam power generated by new plants burning coal, oil, and gas.

## Rivers That May Be Harnessed

The roster of rivers that may be harnessed in this vast program includes many which are little known outside of the states through which they flow. The Niagara, St. Lawrence, Ohio, Tennessee, Missouri, Colorado, and Columbia are today pretty well known nationally, although I frequently find ignorance of just where the St. Lawrence flows. But the others—the Penobscot, Kennebeck, Androscogin, Merrimac, and Connecticut of New England; the Delaware, Susquehanna, Potomac, Rappahannock, and Roanoke flowing into the North and Middle Atlantic; the Santee, Yadkin-Peedee, Savannah, Altamaha, Chattahoochee, Alabama-Coosa, and Tombigbee, flowing from the Southern highland into the South Atlantic and Gulf; the Arkansas, White, Ouachita, and Red flowing from Missouri, Kansas, Colorado, Oklahoma, Arkansas, Texas, and Louisiana into the Gulf; and the Kings, Kern, Feather, and Sacramento of the Great Central Valley of California—these rivers are not generally known as sources of wealth. Yet each of the rivers named represents by itself literally hundreds of thousands of kilowatts of undeveloped power. And, with three or four exceptions, when our multi-purpose river basin programs have been completed, each will generate kilowatt-hours of electrical energy metered annually in the billions.

## Will Create Own Market

Do I hear someone question how we will ever find a market for so much electricity? I answer that this power,

(Continued on page 125)

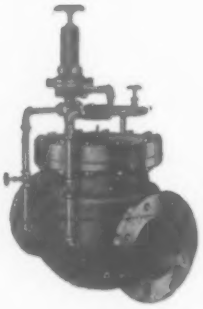
### "Above All, Try Something"

Many will recall the words of President Roosevelt at Oglethorpe University in 1932, when he said:

"The country needs and, unless I mistake its temper, the country demands bold, persistent experimentation. It is common sense to take a method and try it. If it fails, admit it frankly and try another. But above all, try something. The millions who are in want will not stand by silently forever while the things to satisfy their needs are within easy reach."

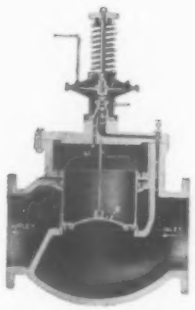
Under the leadership of David Lilienthal and his associates, the great TVA experiment has worked—worked so well that we are going to see the principle applied to the development of well-balanced rural-industrial civilizations in river basins throughout the world.

# PUT PRESSURE TO WORK WITH G-A VALVES

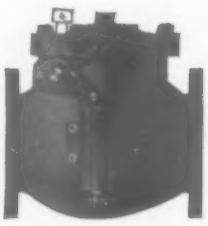


Water Pressure Relief Valve . . . opens automatically, on excess pressure, to dissipate necessary water volume to maintain desired line pressure. Valves may be arranged to open at abnormal pressures and held open under subnormal pressures until the surge subsides. Valve is arranged either with atmospheric pilot valve exhaust or self-contained, according to service conditions and requirements. Sizes 3" to 36."

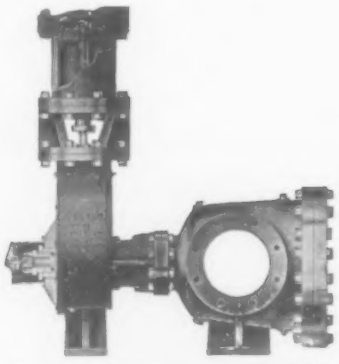
• Assure a high degree of continuous service . . . full line openings without pressure drop on automatic and manual operating services — altitude, reducing, check, relief, emergency, shut-off, etc., with G-A Specialty Valves. Now, as always, GOLDEN - ANDERSON Valves are meeting service requirements at low operational cost; giving performance beyond normal expectations. Write for our latest catalog . . . contains a complete description of all GOLDEN - ANDERSON Valves.



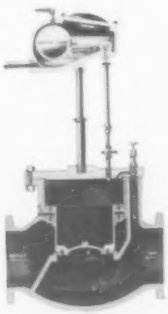
Stop Check Single Acting Altitude Valve . . . automatically maintains a uniform water level within 3" to 12" variation to prevent any tank overflow. Prevents loss or return of storage water back through the valve — makes the valve very desirable for use wherever metered water is purchased, or wherever it is imperative that there be no possible return flow. Valve may be fitted with "Differential" Control for delayed opening. Furnished in 2" to 36" sizes.



Cushioned Swing Check Valves . . . to be used on air compressor lines, water lines, etc. A swing check valve, properly designed for balanced operation to assure a full line flow with minimum pressure drop. Specially arranged cushion chamber on the side prevents slapping or banging of disc against seat on reverse flow. Furnished in globe pattern with noncorrosive trim . . . 4" to 36" sizes.



Cone Thru-Flow Valves . . . assure a full line opening without pressure drop on automatic services. In lieu of gate valves these Cone Valves can be supplied manually operated. Furnished for any automatic services such as altitude, check, relief, etc. Sizes from 4" to 72".



High Pressure Controlling Float Valve . . . particularly adaptable for water level control in heaters, reservoirs, basins, etc., under high inlet pressure where a very close water level must be maintained. Needle valve control permits regulating closing speed of the valve to suit conditions, and inherent air and water cushioning assures smooth operation at all times without shock or bang. Sizes from 3" to 36".

## GOLDEN-ANDERSON VALVE SPECIALTY CO.

FULTON BLDG. . . . PITTSBURGH 22, PENNA.

# Recommendations for a Six-Point Planning Program

Malcolm Pirnie, representing the American Society of Civil Engineers, informed the Senate Small Business Committee recently that planning in advance for both public and private construction activity during the next few years has not been done in a manner which will encourage rapid expansion of building operations. He recommended the immediate adoption of a six-point program to remedy this situation, as follows:

1. Allow the cost of making private construction plans to be considered as current operating charges, exempt from federal income taxation.

2. Beginning immediately, gradually lift the limit of construction work coming under the War Production Board's L-41 Order. The limit now applying is $200. By raising this figure as rapidly as is found compatible with the military situation, the WPB will provide a powerful incentive for materials and equipment dealers to stock up, and will encourage the establishment of new dealerships to replace those closed during the war.

3. If possible, give immediate general tax relief. If this is not possible then provide an incentive for risk capital to enter the construction field by exemption from surtax of income invested in construction. This should apply all along the line, even to the individual who makes a down payment on a house.

4. Through the WPB, make tools and materials available to manufacture construction equipment for contractors.

5. Increase the 171½ million dollars recently appropriated to make available loans to state and local governments for public works planning which is to be administered by the Federal Works Agency.

6. Establish a statistical survey of construction plan preparation and actual construction volume, on a full-time basis. The Federal Works Agency is the logical place for the public works phase of this statistical survey. The suggestion has been made that the Bureau of Foreign and Domestic Commerce establish an overall construction division to correlate all construction data, and this idea appears to have much merit.

Mr Pirnie also expressed the belief that there are serious dangers in the too extensive use of public works for stabilization of the construction industry. He indicated that there are other means which can be used, such as the adjustment of incentive features in the changes in the interest rates on federally insured construction loans.

He expressed the opinion that adoption of his six-point planning program would help put both public and private organizations in position to begin construction immediately when materials and manpower become available.

# Mobile's Wartime Struggle for Water

(Concluded from page 89)

arranged. Piping of the Bienville Reservoir located near the filter plant was cut in on the filtered water line from the clear well. All these changes were needed to put the filter plant into operation. They were made without interfering with service.

## More Pressure Needed

At this stage the city had sufficient immediate supply of water of excellent quality but lacked the means of transporting and delivering it to the consumer. The increased population and demand had badly overtaxed the two supply mains causing a general lowering of pressures over the entire system. As previously stated, each of the reservoirs had its own distribution system. The Bienville Water system delivers water to Mobile through a 24-inch cast iron main and the Spring Hill Reservoir through a 30-inch cast iron main. These two systems cross in many places in the downtown area but the mains were not sufficiently interconnected, were old, and in need of cleaning. Pressures in the downtown areas got as low as 40 psi, and in some outlying districts dropped to as low as 20 psi.

Clean, filtered water could not in itself stop the complaints of the people when they failed to get a sufficient supply of it. In order to get water some persons installed booster pumps on their lines to the detriment of others. Some let hydrants run all night in order to have water to drink and cook with the following day.

To determine the proper corrective measures an outline map of the mains in the two systems was prepared on which were shown population densities, existing pressures, and the desired pressures. One problem was the selection of mains of the proper size to alleviate existing deficiencies. Maximum demand of 111 gallons per capita was assumed and from the population densities the flows from the larger mains were computed. The Hardy Cross Method was then employed to ascertain the distribution flow. By this method and on the assumption that the larger mains of the two existing systems would be cross-connected, it was determined that a new 8-mile 24-inch cast iron main, starting at the filter plant and terminating in the southern part of the town, would best supply the water and equalize pressures. Reading of pressures made after this installation show that actual pressures checked very closely with those computed.

During the construction of the filter plant and since there has been an almost continuous expansion of the distribution system. Approximately 30 miles of distribution lines ranging in size from 6 inches to 16 inches have been completed or are now under construction. These lines were the usual run-of-the-mill construction, with the exception of one 12-inch line which was laid across Mobile River to serve a housing project and Navy barracks.

J. B. Converse & Co. were consulting engineers for this project. J. B. Converse was Construction Engineer; W. A. Brown in charge of structural design; N. H. Holves of the architectural design; and R. A. Polglaze was Associate Engineer on hydraulics. E. M. Stickney, Superintendent of the Water Works, represented the City of Mobile. All the major interconnections and revisions that were made on the distribution system were made by the Mobile Water Works Dept., under the direction of Mr. Stickney and C. C. Williams, his Senior Engineer.

The Federal Works Agency men concerned with this project were: Regional Director, Oliver T. Ray; Regional Engineer, L. W. Duffee; Senior Engineer, R. S. Morris; Construction Engineer, Chas. H. Baker. The Alabama State Department of Health was represented by T. H. Milford and A. N. Beck. The City of Mobile will purchase these facilities from the Government after the war, paying 56.74 percent of the cost.

*Lithographed on stone by Edward A. Wilson*

**Illustration shows installation of cast iron flexible joint subaqueous pipe line specified for the required service conditions. How to do it when you get the go-ahead is a problem we are always glad to help out on if it involves pipe design, or recommendations as to pipe and fittings which have successfully met similar problems. To see that our product is correctly specified for the purpose intended is an important function of our sales engineering and technical staffs. Forty-five years' experience as largest producers of cast iron pipe is behind them and always at your service.**

**U.S.**
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**PIPE**

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# Factors of Planning About Which the Public Feels Strongly

At the Town and Country Planning Summer School held at the University of Birmingham, England, under the auspices of the Town Planning Institute of Great Britain, "Town Planning and Public Opinion" was the subject of a paper in which F. J. Osborn, of Welwyn Garden City, took the rôle of representing the public to the planners. Stating that "at present the gulf between the outlook of planners and of ordinary men and women is so wide as to insulate the motor from the power necessary to drive it," Mr. Osborn expressed the opinion that the factors of planning about which the public feels strongly are few. These, he suggested, could be reduced to seven, which he summarizes as follows:

1. THE INDIVIDUAL HOME—Interest in the character, size, comfort and convenience of the family house is so great as to outweigh all other planning objectives together. More than 9 of 10 families so much prefer the house and garden type of dwelling that, if well-enough-off, they will pay the price of long daily journeys rather than forego it.

2. PLEASANT SURROUNDINGS OF HOME—This is important to us as an avenue to interest the public in "planning." Pleasantness means openness of layout, wide roads, trees, grass,—in short, a "country" feeling. But it is closely linked with No. 4.

3. NEARNESS OF SHOPS—Housewives want reasonably good shops for daily use within a few minutes' walk. They don't mind a bus ride to a main shopping center occasionally.

4. CHARACTER OF NEIGHBORHOOD—All but the tiny minority of the underprivileged or "slum" classes desire to live in a socially "good class" neighborhood—a matter of status, or self-respect, not a desire for local friendships or community life. It can be deprecated as "snobbery," and certainly tends towards income-group segregation, but is an almost universal desire.

5. SCHOOLS, CHURCHES, PUBLIC MEETING-PLACES—Nearly all want to be near one of these institutions, for obvious reasons. Nearness to several is a preference, but perhaps not a "priority."

6. RECREATION SPACE—The most conscious want is for smallish rest-parks near home. There is also a strong demand for playing fields.

7. REDUCTION OF DAILY TRAVEL—This is growing as a conscious public aim. Journeys up to 20 minutes are not regarded as a serious hardship. Habit makes vast numbers tolerant of very long journeys, and rise in income produces tolerance of the cost. Few people understand that planning could enable aims 1 and 2 to be satisfied along with aim 7.

### Aims That Interest Minorities

These seven, Mr. Osborn pointed out, "are almost all personal aims and No. 1 is a great political force. . . . Many other aims interest minorities—some of them having very high priority with individuals." Among these Mr. Osborn listed:

Community integration
Access to country
Reduction of traffic congestion
Tidiness
Economic efficiency
Architectural design or control
Urban "liveliness"
Sense of enclosure
Prevention of ribbon-building, etc.
Preservation of agricultural land.

"The further you go down priority lists of this kind," said Mr. Osborn, "the less sure you can be of the right order. The items low on my list are minority items, but their political chances will not vary mathematically with the number of people keen on them. The impact of opinion on events is much more complex than that. A practical proposal, backed by an energetic minority, may be carried without being understood by the majority at all. *But not if it cuts across something the majority really cares about.* The main elements in town and country planning involve certain restrictions on existing liberties, and they can't be effected without a positive public opinion in their favor. In fact it is just because there is already an extremely strong public opinion in favor of some of its components that planning has reached its present position.

"To develop that position successfully, the exponents of planning must put forward a consistent body of policy and get it accepted as a whole. They have no chance of getting a policy accepted unless it contains a solid core of proposals capable of arousing majority enthusiasm. Minor items appealing only to small intense sections of opinion could be included and carried along with the rest, provided that the items hang together, and can be handled by the machinery necessary for the big things; provided also that the minority items are not objectionable to majority opinion. But if you lean backward on the big popular things, and parade the minority items, you will not get either.

### Essentials for Success

"This is the real peril of the planning movement at this moment. . . . I *think* planning will win through. But two of the essential conditions of its success are:

1. *That planning gets behind it the enthusiasm and determination of a large mass of public opinion; and*

2. *That planners make themselves, and keep themselves, fully aware of the needs and desires of the millions, and are unfailingly loyal to these, their most numerous and indispensable clients.*

"At present these conditions are by no means fulfilled. And time is short. . . .

"In the work of crystallization of policy and the presentation of it to the public, planning technicians ought, I suggest, to take as active a part as their responsibilities permit. We are at a formative stage in planning; there are all too few persons knowledgeable on the subject; and therefore it would be a pity if the public service status of planners were to debar them from a share, however discreet, in the formulation of policy and making it understood. It is desirable that planners should be linked up with an organization or organizations engaged in public education, locally and nationally."

EDITORIAL NOTE.—Although the Birmingham Town and Country Planning School was held in August 1943, the 100-page Report pamphlet, owing to wartime difficulties and paper shortage, was not published here until much later, and hence has not been previously mentioned in THE AMERICAN CITY.

## Community Folk Dancing

THE fun of folk dancing has been rediscovered in many parts of the country, and in Philadelphia has been made an important part of its annual recreation and rehabilitation program. It may, therefore, be of interest to know that a Community Folk Festival Handbook has been issued in Philadelphia, describing the step-by-step organization of a folk festival, some of our older traditions and some newer ones which have grown up in America, with examples of songs and dances to be found in most communities. The Handbook may be obtained for 50 cents from the Evening Bulletin Folk Festival Association, Filbert and Juniper Sts., Philadelphia, Pa. It also contains a bibliography.

## Discussion Guides

NUMBER 12 in *The Reader's Digest* series of handbooks for discussion on vital topics of the day is called "Making Over Our Home Town." It consists of two booklets, Part I, called A Meeting to Arouse Interest, and Part II, called A Meeting to Get Action. Bibliographies of reference reading are included on health, safety, "appearance and convenience of our town," and "whether our town is a satisfactory place." *The Reader's Digest* pamphlet called "A Chairman's Guide" is a useful accompaniment to this series. It contains a bibliography and an index. Copies of these booklets are to be had from the Program Service of *The Reader's Digest*, Pleasantville, N. Y.

# "My Hat's Off... To MILLER METERS When I Go Shopping"

**Not only best possible traffic control, but real *Customer Satisfaction***

. . . That's the idea back of the Miller Manual The Miller, for instance, has a simplicity of operation that wins the **plaudits of parkers and municipalities alike.** Its soundly engineered mechanism is always under uniform and minimum tension because it is wound by the motorist and not a patrolman — runs only the minutes of time paid for by the pennies and nickels actually inserted. This feature alone minimizes replacement costs due to breakage . does away with all winding expense to the city. Result is: full time service, low maintenance, constant revenue from every meter on the job. For availability of Millers, for your city write today.

*"California Shop" Sports Togs, courtesy of SPIEGELS 1945 Spring catalog*

**NICKEL PARKING**
***for long time shoppers***
★
**PENNY PARKING**
***for the "in-and-outer"***

5¢ 1¢

# Duncan METER CORP.

**1500 SOUTH WESTERN AVENUE CHICAGO 8, ILLINOIS**

## A Small City Plans Its Future

(*Concluded from page 91*)

large cities, industrial centers, boom towns, and the like, but our town could be spared the cost and the bother. We liked our town. It was good enough for us.

Then, one day things began to happen. For nearly a century Greenville citizens had been scrupulous about their building. Nice homes were built on large lots. Business and industry were more or less naturally grouped. But a new trend was spoiling this. Retail stores were springing up in good residential areas. Signboards, filling stations, dog kennels, etc., were being built without regard to adjoining property owners. Citizens with equities in homes built up over a period of years were losing them overnight through the wholesale depreciation of property. Finally, organized civic groups began appealing to the City Council.

This was the "first step." The others followed rapidly. The establishment of a planning commission; the launching of a planning study; the hiring of a planning engineer (Ladislas Segoe of Cincinnati); the development of the comprehensive plan; the public hearings; the adoption of zoning; the adoption of the plan; the publication of the plan; and, finally, the education of the public.

The illustrations on pp. 90 and 91 show parts of Greenville's comprehensive plan.

Recently the American Society of Planning Officials at 1313 East 60th Street in Chicago, published a detailed history of Greenville's planning program. It is entitled *Greenville Faces Planning*, and can be secured free of charge by writing to Walter H. Blucher, Director, at the above address.

## Harnessing the Nation's Power

(*Concluded from page 119*)

made available in accordance with the TVA principle, will create its own market and, in creating it, will create stable employment and higher living standards throughout the land.

Thus our river basin programs, if undertaken in accordance with the cooperative valley authority principle, are going to enable the children born and raised in these valleys to find a full life, a life of spiritual as well as physical health, in their own communities instead of drifting to a great urban industrial and commercial center in quest of precarious jobs.

The *Electrical World* talks of doubling average residential use of electricity in five years and multiplying it twelve-fold in twenty years. The great electrical equipment concerns have scores of new appliances ready for manufacture in the post-war period and other scores of new electrical applications to industrial processes. Many of these will permit the development of small indigenous industries in connection with valley authority programs.

If we are to go forward on the great adventure of building a well-balanced rural-industrial civilization, strong because founded on the moral principle of cooperation rather than the amoral principle of individuals, we must approach the development of all of our river basins in accordance with the principles of democracy already proven in the TVA experiment.

As envisioned by the Irish poet, A.E., the building of a great civilization must not be concerned with material things only, but must be related to the divine order of the universe. This, he said, involved two things: freedom of the individual and cooperation with one's fellowmen—the developing of a sense of identity of interest, of common purpose, of interdependence and solidarity. These combined, he saw as constituting real democracy.

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From an address before the League for Industrial Democracy, in New York City, May 12, 1945.

## Wartime Community Expansion

(*Concluded from page 113*)

and on the timing of disposition. Communities such as ours have made many sacrifices to the war effort for the sake of expediency. We have stood by while the government condemned our best property for housing projects. We have put up with federal red tape and clumsy procedures to avoid bickering. We have seen our communities become boom towns over night with a letdown in moral standards, a sharp increase in crime, in venereal diseases, and in illiteracy. The material gain some have received can never make up for the permanent scars that have been inflicted upon the community and its people. For these reasons we feel the government's property interests should be secondary to the problems the communities must face in trying to salvage some permanent good out of the ruins.

## *Fumigation and Its Municipal Regulation*

THROUGHOUT the ages, the task of ridding our houses of unbidden guests such as roaches, fleas, bedbugs, rats, and similar pests has been a problem. Fumigation is advantageous in solving some of these problems. It is particularly effective because it is one of the few methods which approach a complete kill in a relatively short time.

Fumigation can be used to control many different types of pests such as moths, cockroaches, bedbugs, fleas, flies, silverfish, carpet beetles, lice, rats, and others. But while the use of poisonous gases in fumigation is highly effective, it is also dangerous if applied carelessly. Almost all fumigants which are in common use are poisonous to some degree and some are also explosive. The use of sulphur candles by householders often is the cause of fires. Several fatalities have resulted from ignorant or careless fumigation practices in St. Louis. Municipal regulation is therefore important.

The regulatory laws of St. Louis were passed many years ago and needed revision. Recently, an ordinance was proposed in the Board of Aldermen to regulate the practice of fumigation so that health and property would be safeguarded more effectively. The ordinance was carefully prepared after thorough discussion with various city officials, a study of the ordinances of other cities, and after holding detailed discussions with fumigators and representatives of the fumigation industry.

The ordinance requires that a fumigation permit be taken out for certain types of fumigations, provides for the licensing after qualification of operators and registration of operator helpers, and requires that a bond or insurance be posted by the fumigator. A board of examiners will determine the fitness of an operator to receive a license.

Other provisions of the ordinance are inspection and approval by the St. Louis Health Division of first aid and personal protective equipment, of warning signs, and of buildings fumigated. Partial fumigation of structures is permitted only under immediate supervision of the Health Division. Guards, warning signs, proper ventilation period, and similar standard precautions are required.

This ordinance became effective on March 8, 1945. It is expected that under this regulation, St. Louisans will use this very successful method of pest control without hazard to the safety or health of anyone in the city.

# POST WAR HIGHWAY PLANNING DEMANDS *accurate* TRAFFIC COUNTS!

In city . . . . in country . . . . wherever engineers are maintaining or planning streets and roads . . . . the Streeter-Amet Traficounter is providing indispensable traffic counts . . . . with more speed, greater accuracy and at lower cost.

Essential to the solution of present and future traffic problems are reliable traffic measurements . . . . showing how much traffic, when it moves, and in what channels. Today, in hundreds of locations, Streeter-Amet Traficounters are measuring and recording vehicle movement . . . . breaking down the flow by 15 minute periods. They are on the job continuously, day and night, in fair weather and foul. They require minimum of labor and attention.

Traficounters are being used by city traffic engineering bureaus, county highway officials and state highway departments. They are thoroughly proven in use. Write today for full information.

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## *Institute of Community Service, Syracuse University, July 2-14*

AN Institute of Community Service, the first of its kind in New York State, will bring together at Syracuse University, July 2-14, some 40 leaders from cities and towns throughout the state, who, working closely with expert consultants, will study the problem of mobilizing community resources for the war and post-war periods.

Co-sponsors of the Institute are Syracuse University, the New York State Citizens' Council, and the State Departments of Agriculture, Commerce, Health, Labor, and the State Division of Housing.

Twenty-four round table sessions—one each morning and afternoon for twelve days—will discuss each question from two points of view: (1) an overview of the facts and clarification of issues and (2) construction of practical programs for local use.

Further information and enrollment blanks are obtainable on application to Kenneth G. Bartlett, Acting Director, Syracuse University Extension School, 309 South McBride St., Syracuse 3, N. Y.

## *New Regulations on Federal Aid for Highways*

THE administrative regulations covering procedures under the Federal-Aid Highway Act of 1944, released under date of April 21, 1945, have been made available for distribution by the American Association of State Highway Officials, National Press Building, Washington, D. C. Committees of that Association now have under consideration operating procedures for governing design standards and other technical data to be recommended to the Public Roads Administration.

## *Mayor Enlists Aid of Municipal Research Bureau*

IT is no news that Bureaus of Municipal Research seek opportunities to survey the efficiency of their local governments. But it is less customary for a Mayor to take the initiative and to favor the use of city funds for studies of this kind.

Such action has been taken by Mayor Bernard Samuel of Philadelphia in signing a contract with the Philadelphia Bureau of Municipal Research for a study by that non-partisan citizens' agency of probable future costs of all local governmental services, including debt service, year by year, for the next six years. The study, made for the City Planning Commission, is to be completed early in the fall of the present year, and presented to Edward Hopkinson, Jr., Commission Chairman.

"This survey," Mayor Samuel explains, "is related directly to the orderly, planned development of Philadelphia. It will round out a financial picture of the costs of maintaining and bettering existing public services while inaugurating a program of public improvements, calling for capital outlays, when men, materials, and equipment are no longer largely absorbed by the demands of war."

# Conventions—When and Where

***June 15—Crawfordsville, Ind.**
AMERICAN WATER WORKS ASSOCIATION—INDIANA SECTION. Regional Meeting. (Country Club) Sec., C. H. Bechert, 402 State Library Bldg., Indianapolis, Ind.

**June 18-21—Toronto, Ont.**
CANADIAN FEDERATION OF MAYORS AND MUNICIPALITIES. Annual Conference. (Hotel Royal York) Sec., Jessica Allan, Mount Royal Hotel, Montreal, Quebec.

***June 19—Monticello, Ind.**
AMERICAN WATER WORKS ASSOCIATION—INDIANA SECTION. Regional Meeting. (Sportsman Inn) Sec., C. H. Bechert, 402 State Library Bldg., Indianapolis, Ind.

***June 20—LaPorte, Ind.**
AMERICAN WATER WORKS ASSOCIATION—INDIANA SECTION. Regional Meeting. (Country Club). Sec., C. H. Bechert, 402 State Library Bldg., Indianapolis, Ind.

***June 21—Columbia City, Ind.**
AMERICAN WATER WORKS ASSOCIATION—INDIANA SECTION. Regional Meeting. (Country Club). Sec., C. H. Bechert, 402 State Library Bldg., Indianapolis, Ind.

***June 22—Anderson, Ind.**
AMERICAN WATER WORKS ASSOCIATION—INDIANA SECTION. Regional Meeting. (City Park). Sec., C. H. Bechert, 402 State Library Bldg., Indianapolis, Ind.

***June 27-29—Saskatchewan, Canada**
SASKATCHEWAN URBAN MUNICIPALITIES ASSOCIATION. Annual Meeting. (Council Chambers, City of Regina) Sec.-Treas., S. N. MacEachern, Bessborough Hotel, Saskatoon, Sask.

**Aug. 21-24—Cleveland, Ohio**
INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual Meeting. (Hotel Statler) Sec., Daniel B. Tierney, 8 Robbins Rd., Arlington, Mass.

***Sept. 11-12—Dickinson, N. D.**
LEAGUE OF NORTH DAKOTA MUNICIPALITIES. Annual Meeting. Exec. Sec., Myron H. Atkinson, City Auditor, Bismarck, N. D.

***Sept. 14—Pittsburgh, Pa.**
AMERICAN WATER WORKS ASSOCIATION—WESTERN PENNSYLVANIA SECTION. Annual Convention restricted to local area. (Hotel Roosevelt). Sec., E. P. Johnson, 418 Flannery Bldg., Section 13, Pittsburgh, Pa.

***Sept. 17-20—Rock Island, Ill.**
BUILDING OFFICIALS' CONFERENCE OF AMERICA. Annual Meeting. Sec.-Treas., Arthur N. Rutherford, Building Inspector, West Hartford, Conn.

***Sept. 20-21—Mammoth Cave, Ky.**
KENTUCKY MUNICIPAL LEAGUE. Annual Meeting. (Hotel Mammoth Cave) Exec. Sec., Carl B. Wachs, c/o University of Kentucky, Lexington, Ky.

* First appearance on this page.

# City Manager Appointments

DONALD ABBOTT, a local man, has been appointed town manager of Masardis and Portage Lake, Me., to replace William B. Burns who resigned to accept the managership of Caribou, Me.

JAMES CUMMINGS, engineer who has been working for OPA, has been appointed city manager of Kingsford, Mich., to fill the vacancy created by Henry L. Wagner's resignation.

ELDER GUNTER, director of personnel, Wichita, Kan., was appointed city manager of Newton, Kan., to replace W. O. Cuthbertson, who resigned on April 17 after six years of service.

ALBERT W. LEYSATH, former employee of Springfield, Vt., has been appointed town and village manager of Chester, Vt.

FRED A. RHODES, director of public works and acting manager of San Diego since Robert W. Cooper's death last December, has been appointed city manager of San Diego, Calif.

F. H. SMITH has succeeded S. A. Youmans as city manager of Tifton, Ga.

BILL N. TAYLOR will become city manager of McAllen, Texas, May 16. Mr. Taylor served as city manager of Longview, Texas, from 1928-40, and at Port Arthur, Texas, from 1940-45.

RALPH M. WILSON, formerly with the Federal Government, has been appointed borough manager of Blairsville, Pa.

CLARENCE E. RIDLEY
Executive Director
International City Managers' Association, Chicago, Ill.

# The Municipal Bond Market

Some sales of new issues as reported in May issues of *The Bond Buyer*:

| Amount | Borrower and Purpose | Rate (%) | Term (Years) | Basis (%) |
|---|---|---|---|---|
| $400,000 | McKeesport, Pa., Funding | .75 | 1-10 Ser. | .705 |
| 1,500,000 | Louisville, Ky., Flood Protection | .80 | 14 Avg. | .781 |
| 290,000 | Urbana and Champaign Sanitary Dist., Ill., Sewer | .88 | 8.17 Avg. | .865 |
| 310,000 | Bexley, O., City Sch. Dist. | 1.0 | 10.75 Avg. | .947 |
| 750,000 | Norwalk, Conn., First Taxing Dist., Water Works | 1.0 | 18.83 Avg. | .96 |
| 300,000 | Clayton, Mo., Public Park | 1.0 | 13 Avg. | .985 |
| 2,448,000 | Tacoma, Wash., Gen'l Obligation Sewer (Non-Callable) | 1.0 | 13.17 Avg. | 1.1483 |
| 325,000 | Newport, R. I., Consolidated | 1.25 | 15.25 Avg. | 1.15 |
| 190,000 | Wahpeton, N. D., Sch. Dist. | 1.25 | 13.17 Avg. | 1.1883 |
| 165,000 | Gary, Ind., Sch. City | 1.20 | 20.0 | 1.199 |
| 300,000 | Wisconsin Rapids, Wis., Water Works Mortgage Revenue | 1.25 | 10/14.5 O.-A. Prem. | 1.35 |
| 100,000 | Woodstock, Va., Water Refunding | 1.40 | 11.25 Avg. | 1.397 |
| 150,000 | Buena Vista, Tex., Ind. Sch. Dist. | 1.50 | 4.81/5.50 O.-A. | 1.589 |
| 699,999 | West New York, N. J., Refunding | 2.10 | 13.83 Avg. | 2.08 |
| 1,035,000 | Mobile, Ala., Gen'l Obligation Water | 3.0 | 15.67 Avg. | 2.188 |

# FREEWAY CAPACITY CAN BE *INCREASED* 190%

## . . . because streetcars would increase the total passengers-per-hour capacity from 10,500 to 30,500

IF a system of freeways is part of your city planning, here is something to keep in mind.

Assume an eight-lane expressway, operating to capacity. It will accommodate 10,500 passengers per hour in one direction. By adding one streetcar line, which can handle 20,000 persons per hour, the hourly capacity of the freeway can be increased 190 per cent. Not only would this addition greatly increase the passengers-per-hour capacity, but the investment per passenger handled would be reduced in the same proportion.

When provision is made for the operation of public-transit vehicles on a freeway, every part of the community benefits. Neither public nor private vehicles obstruct the other. All traffic moves much faster. There are fewer accidents, greater protection for pedestrians. Intown areas retain their residential attractiveness. Property values are stabilized at levels which produce satisfactory tax receipts and a stronger financial position for the city.

In addition, using transit vehicles for daily travel solves the automobile parking problem. Each automobile takes up almost as much space as that required by each office worker. If everyone rode in automobiles, one building would be needed for employees and another one to store their cars.

When your Master Plans are being made, be sure you consider provision for transit right-of-ways. You'll move more people faster, reduce traffic congestion, increase safety—and get the most for your money. *General Electric Company, Schenectady 5, New York.*

**UNITS PER HOUR REQUIRED TO CARRY—**

| Type of Vehicle | 500 Pass. Per Hour | 1000 Pass. Per Hour | 5000 Pass. Per Hour | 10,000 Pass. Per Hour | 40,000 Pass. Per Hour | 80,000 Pass. Per Hour |
|---|---|---|---|---|---|---|
| Automobile, 1.75 Pass. (prewar average) | 286 | 562 | 2860* | 5620* | 22,860* | 45,700* |
| Bus, 30 pass. (seated) | 17 | 34 | 167* | 334* | 750* | 2667* |
| Trolley coach, 44 pass. (seated) | 12 | 23 | 114 | 227* | 910* | 1820* |
| PCC streetcar, 54 pass. (seated) | 10 | 19 | 93 | 185* | 740* | 1480* |
| Rapid transit, 10-car train, 100 pass. per car | — | 1 | 5 | 10 | 40 | 80* |

*More than one lane required. (24-second headway minimum except rapid transit, 1.5 minutes)*

*Table based on normal or seated load.*

GENERAL ELECTRIC

BUY WAR BONDS

107-130-9560

# Traffic Control and Facilitation

Conducted by Traffic Control & Facilitation Committee, Institute of Traffic Engineers, 60 John St., New York

W. L. Robinson, Chairman; Donald S. Berry, Fred W. Fisch, Maxwell Halsey, Wilfred F. Irvin, Harry C. Koch, Philip S. Mancini, Claude N. Maurer, W. F. Milner, I. S. Shattuck, George M. Webb

## Traffic Engineers Need the Help of Courts, Enforcement Officers, and Good Drivers

By M. C. STARK
Research Engineer
Capital Transit Company
Washington, D. C.

TRAFFIC engineers, in spite of the important new contribution they have made to traffic control and facilitation, cannot do the entire job of improving efficiency and safety in street and highway use. The traffic court and enforcement situation, the type of basic code governing operation of motor vehicles, and the procedure in licensing drivers all play important parts. The following summary of recent developments helpful to traffic engineers will bring readers up to date.

### Traffic Courts and Enforcement

Considerable progress has been made in traffic police administration through new techniques in accident reporting, driver licensing, testing the drunken driver, and others, Norman Damon, Vice-president of the Automotive Safety Foundation, reports. The modern traffic officer is a far cry from his prototype of twenty years ago. But enforcement work of the police officer must dovetail with that of the traffic judge in the courtroom. The lax procedure and the assembly line justice encountered in many of them has often resulted in a disrespect for traffic laws which is reflected in a toll of more than a million persons killed and injured each year on our highways. Statistics show that two out of every three fatal accidents involve a violation of the law.

A survey of the nation's traffic courts made several years ago revealed the general low level of justice administered. Out of this study came 57 specific recommendations for improvement of our traffic courts and for cooperative effort on the part of the courts, the police, and safety and civic groups to raise the traffic court to the same level of respect which exists for our higher courts. Sporadic improvements already have been effected through state and regional traffic court conferences, but much remains to be done before we can look to the traffic court for a substantial contribution in reducing the nation's traffic accident roll.

### Motor Code Revisions Under Way

1. *The Uniform Vehicle Code* for states was reviewed last year by a committee of the National Conference on Street and Highway Safety, and a complete reprinting of the five acts with all amendments is expected in the early future. The principal changes were summarized in THE AMERICAN CITY of January, 1945. Outstanding changes were few, showing that the main need now is for adoption of the Code, particularly Act V containing the rules of the road and equipment requirements.

2. *The Model Traffic Ordinance for municipalities* is under review by the same committee, the legislative draftsman studying it with a view of adjusting it to the recent Code revisions and at the same time simplifying it. A re-draft will be submitted to the committee at an early date.

3. *The Manual on Uniform Traffic Control Devices* is also undergoing a comprehensive review. The joint committee of the American Association of State Highway Officials and the National Conference on Street and Highway Safety, which prepared the original manual in 1934 and reviewed it in 1938, was subsequently enlarged to bring in representation of the Institute of Traffic Engineers. The committee developed the War Emergency Edition in 1942 and is now studying post-war needs. Questionnaires have been sent out with questions on signs, markings, signals, and islands, and the committee will welcome information and opinions, favorable or unfavorable.

### War Veteran Licensing Problems

Motor vehicle administrators are considering the problem of licensing and re-licensing war veterans, particularly disabled veterans, in order to develop standards for examinations, examining procedures, and specific compensatory equipment and attachments. The greatest interest in the program is being shown in states where large army and navy hospitals are located.

Administrators are supplying their most experienced personnel to work with the Army and Navy medical staffs in setting up training courses and assisting the trainees in meeting examination requirements. The intention is to establish a system under which each veteran, upon successfully completing a training program and examination sponsored by one state, will receive a statement of qualification that will be accepted by other states. To carry out this plan completely, a modification of the law will be needed in the few states which specifically require their own department to examine all applicants for driver licenses.

### State's Rôle in Pedestrian Control

Administrators feel they have made a good step forward in the acceptance of a new concept of the state department's part in combating the pedestrian problem. They have a great opportunity to provide leadership in the pedestrian regulation and control program in each state by heading up and coordinating a continuous campaign to be carried out by the various municipalities.

### License Revocation

Another activity of the administrators is the development of a manual on uniform procedures for suspension and revocation of driver licenses and proper uses of traffic accident reports and individual driver records in driver license administration. It has been found that withdrawing the privilege of driving is often more effective than the punishment dealt out by the courts. A standard policy is being formulated and adequate legislation in those states needing it is urged.

(*Continued on page 133*)

# This Again

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low operating costs—the results of simplicity and ruggedness. This sturdiness keeps upkeep costs down. Also, Mark-Time is self-winding—no meter winding expense. And the big dial spots violations, squelches arguments, simplifies traffic work.

# MARK-TIME

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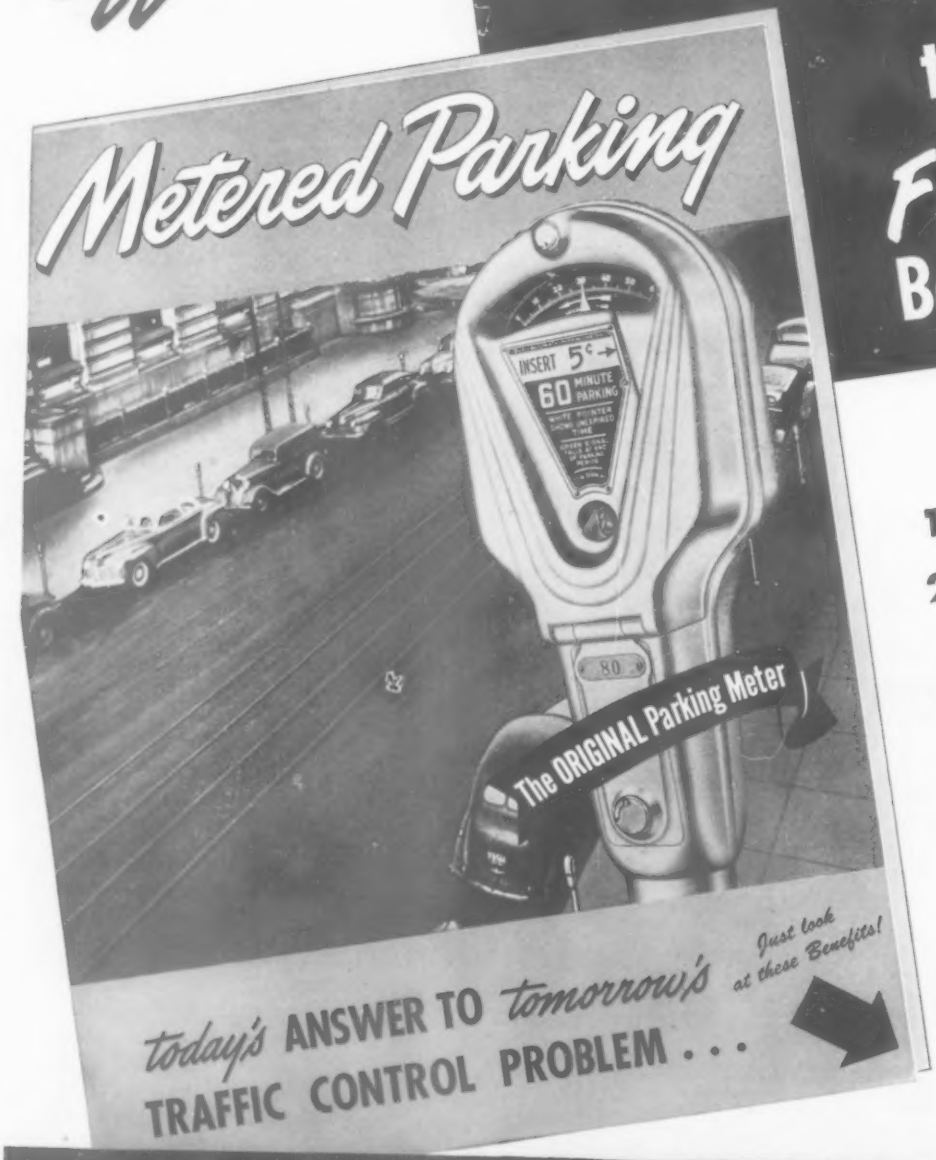
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Other projects, many of which are continuing from one year to the next, are the adoption of the Uniform Vehicle Code by all the states, uniform reciprocity between all states for vehicles in interstate operation, uniform vehicle inspection laws, wide establishment of driver training courses in high schools, development of a new and different safety education program for the average driver, the drafting of a uniform law for the registration of commercial vehicles by the "gross weight method," and the drafting of a uniform financial responsibility law.

# New Type Origin-Destination Surveys Conducted

A NEW technique for making urban traffic origin and destination surveys has been devised and already used successfully in 26 cities where surveys are being conducted under the direction of U. S. Public Roads Administration staff. Further refinements promise a method which will give information of a completeness and reliability not hitherto attainable in urban traffic studies.

The new plan involves a method of conducting home interviews so as to develop information on all travel by occupants within the area of a typical week day.

PRA engineers worked out the "dwelling unit" survey technique when it was realized that conventional methods of making origin-destination studies were not providing desired information. Conventional methods require that traffic be stopped and interviews conducted at points of concentration. Such methods, however, are applicable only to problems of limited scope or to those of a more general nature in small or medium sized cities. The large traffic volumes in large cities make roadside interviewing extremely difficult.

In organizing the new survey method, a uniform proportion of the dwelling units are selected throughout all sections of the metropolitan area. Interviewers obtain from the residents of these selected units a record of all trips made by automobile, bus, or streetcar on the last week day preceding the interview. For trucks and taxis the basis of sampling is the requisition list and a complete record of the day's travel is obtained from the driver.

The proportion of dwelling units to be included in the sample was fixed at ten percent for cities of medium size, such as Savannah, Tulsa, and Little Rock. This percentage was arbitrary, based largely on the experience of the United States Bureau of the Census. For metropolitan areas of large size, such as Kansas City and Milwaukee, it was decided that five percent would be sufficient.

Once the sample is selected it is rigidly adhered to and no substitution is allowed. If a dwelling unit in the sample is vacant, that fact is the answer wanted because no travel was performed by persons residing in it. Every effort is made to obtain complete information on all of the travel by all residents in a selected dwelling unit and as many calls are made as are required to do this.

Favorable publicity in the press and by radio, explaining the purposes and methods of the survey before the interviewing is started, has proved beneficial, helping to obtain the cooperation of the public, principally by eliminating any suspicion that the questions have anything to do with gasoline rationing. In most instances additional information on the survey is given by postcards sent to the residents of the dwelling units before the call is to be made.

Included among the questions asked are: "How did you make this trip?" "Where and when did you start?" "Where and when did the trip end?" "What was the purpose of the trip?" "If there were no wartime shortages or restrictions, would you have made this trip as an auto driver?"

A supplemental report, applicable to auto drivers only, includes such question as: "How many passengers made this trip, yourself included?" "How many intermediate stops for your own purposes or your passengers' during this trip?" "What were the principal streets used on the trip?" "Did you park the car or cruise at the end of the trip?"

Another section has six specific questions on parking, including: "Where and for how long did you park the car?" "What kind of parking space did you use?". "If charged for parking, what was the charge?" "How long did it take to go from where you parked to your destination?" "How many times a month do you park in this manner?" and, "Why did you use this parking space?"

In order to test the completeness of the data being obtained, certain well-known points, preferably bridges, underpasses, or other constructions through which large columns of traffic funnel, are designated as control points and traffic passing them is counted and classified.

The extent and method of training interviewers have been found to be most important. Live, wide-awake persons are sought who have no preconceived ideas of what is wrong with traffic. There should be one supervisor to

NO._____ STATE OF OKLAHOMA

U. S. BUREAU OF PUBLIC ROADS STATE HIGHWAY COMMISSION

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DATE_____ _____ STATE DIRECTOR

*Identification card carried by interviewers, mostly women, employed in Tulsa, Okla., where the first of a new type of traffic origin and destination study was conducted.*

# P. C. C. CARS ARE DEPENDABLE

"Sure, I like P.C.C. Cars. They take me where I'm going... in a hurry and on time. They're roomy and comfortable, and I can count on them. They're as dependable as my watch."

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Throughout the country, Westinghouse electrical equipment is assuring top performance of P.C.C. Cars. The Westinghouse 1432 motors and accelerator control provide flexibility and easy handling. Our long experience... engineering and manufacturing facilities are at your service. Call your Westinghouse office or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-15102

**MORE PEOPLE RIDE P.C.C. CARS**

**SPEED**—The fast acceleration and reserve power assure stop-and-go efficiency and maximum speed.

**SMOOTH RIDING**—No rough bumps as you glide over the rails.

**QUIET**—Rubber mountings eliminate the annoying squeaks and rattles.

**COMFORT**—Blown resistors and thermostatic controlled ventilation and heating, supply fresh air at comfortable temperatures.

**DEPENDABILITY**—The unfailing power supply and the faithful performance of the Westinghouse motors and accelerator control contribute much to the dependability of the P.C.C. Car.

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each ten interviewers. Housewives have been used most successfully as interviewers in most places. In surveys so far, the average number of persons used at one time has been 20 to 40. The number of persons per dwelling unit averages about 3.3, and the interviewers have completed about one dwelling unit per hour, on the average.

## *He Spoke Wisely for the Transit Industry*

WHEN Charles Gordon died on May 3, the transit industry, municipal government, and the public of the larger cities lost an able advocate for better urban living. Far more than an advocate, he understood and was able to explain the faults, needs, and larger civic values of local transportation.

In 1936, when THE AMERICAN CITY was asked by persons in the transit industry to try to interest city officials in their local transportation systems and to improve relations between them and the transit executives, Charles Gordon took off his coat and vest and worked with our editorial staff to formulate a program of benefit to all parties concerned. The theme of the campaign, which still continues, is: "Genuine Cooperation, the Road to Modern City Transportation."

At the beginning, the industry was saddled with a retributive six billion dollar debt, obsolete rolling stock, small public sympathy and little consideration from the local representatives of the public. Most obsolete of all the equipment was the trolley car. Having once shot past the horse and buggy, it was now left in the dust of all the motor vehicles which could dart around it, though it did succeed in impeding many. It would have disappeared like the dodo, except that there was and is a need for a capacious mass vehicle. Charles Gordon directed the research that produced the fast, silent Transit Presidents Conference Committee (P.C.C.) street car. A model of the P.C.C car prior to its entry into city traffic was shown on the cover of THE AMERICAN CITY for May 1936, and the new car was described in detail on page 81 of that issue. There are now 2,487 of these cars operating successfuly in 20 cities. If it had been introduced five years earlier the street car would have lost far less ground than it has.

Charles Gordon was an enthusiast also for the trolley coach which has done so much to retain for the public the advantages and prestige of electric transportation. He believed, too, in the motor bus as the feeder vehicle serving regions where traffic is lighter.

Editors of THE AMERICAN CITY had known Charles Gordon since his own editorship on *Electric Railway Journal* and *Transit Journal* and appreciated his cooperative spirit. He did not spare himself, and he can be ill spared by his friends and by the urban millions who are moved—and will continue to be moved—more quietly, smoothly, efficiently because of his life work.

# Providing Parking Spaces in Downtown Business Districts

THE expected traffic increase after the war calls for accident-prevention programming now. Pedestrian educational plans are in progress, and the public is being informed generally what to expect in traffic hazards in the post-war period. One more problem demanding immediate attention is that of parking the increased number of cars. Each city, no matter what the population, is faced with individual city parking problems. Certain basic solutions, however, can be applied with variation in any city.

Perhaps one of the chief considerations is to find exactly what your city parking problem is, particularly in the downtown or business area. A parking survey will find where motorists want to park, how much they are willing to pay for parking spaces, how much time they want to spend away from their cars, the general purpose of trips downtown, and whether or not better parking facilities at lower prices would induce them to do business downtown more often. The American Automobile Association will soon publish a comprehensive *Parking Manual* which lists the essentials of a complete parking survey. Half-hearted support is not enough in conducting a survey, the intent being to discover just what problems exist and to find appropriate solutions to these problems. It calls for the full cooperation of townspeople as well as city officials. Leaders should include such citizens as the mayor, Chamber of Commerce, merchants, and the city traffic engineer.

Shoppers often find that downtown shopping districts are too inaccessible and parking too costly. They prefer to patronize outlying shopping districts where free parking is available. Downtown merchants will often use parking spaces which are available early in the morning and continue to park all day, while the customer is left to find parking space as best he can.

### Parking Meters

There are ways to keep townspeople downtown shoppers, however, and they won't resent directed parking provisions as long as these indicate an attempt to obtain fair treatment for all parkers. When curb parking is permitted, experience has shown that the parking meter is more effective than the police officer who patrols the streets. The meter has the added advantage of bringing in revenue. Spot surveys will show whether certain blocks should contain meters with shorter time limits than one hour. Meter rates can be dropped or raised according to locations and time intervals of parking.

The ideal curb-parking situation exists when regulations are well enforced and when time limits are such that even during peak hours there is sufficient rotation of spaces to permit motorists to find vacant spaces.

Most medium-sized towns have land behind town buildings which can provide good interior-block parking spaces and commercial loading zones. "Fringe" parking can be accomplished by the use of side streets near the business and shopping district. Merchants can cooperate too, by providing lots behind or near their buildings and permitting free customer parking for designated times and a small fee to be collected after a certain time limit elapses.

—From *Solutions to Local Parking Problems* by D. GRANT MICKLE, Traffic Engineer Automotive Safety Foundation, Washington, D. C.

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Because it is so fundamentally right, the Form 79 is a post-war model as it stands. And this luminaire is again available in its original aluminum construction.

Besides providing a means of ending the dangers of dark-street driving, the Form 79 offers unexcelled economy and attractive appearance. Make it your first choice for essential needs today, for full-scale relighting tomorrow. *General Electric Company, Schenectady 5, New York.*

**Your local electric-service organization and the G-E Illuminating Laboratory can help you develop a program for modern public-safety lighting. Ask for information.**

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**Buy all the PONDS you can—*and keep all you buy***

# Outdoor Lighting

STREETS AND HIGHWAYS

## Night Accidents Cost More Than Adequate Illumination

By RICHARD E. SIMPSON
Consulting Illuminating Engineer
Illuminating Engineering Society
Hartford, Conn.

THERE were 126 pedestrians killed in Connecticut in 1944 through violent contact with automobiles. A breakdown of the 126 pedestrian fatalities shows that 39 occurred in the daytime and 87 at night. Twenty-nine of the daytime fatalities and 62 of the night fatalities occurred in rural areas. On the basis of a total of three billion vehicle miles of traffic volume, 75 percent of which is by day and 25 percent at night, this is a day pedestrian fatality rate of .0173 per million vehicle miles and a night rate of .1160.

Although the number of night pedestrian fatalities is slightly more than twice the number occurring in the daytime, the night rate is almost ten times higher than the day rate. Thus pedestrians are killed at night ten times more frequently than by day for equal volumes of vehicular traffic.

### Darkness Contributed to 74 Deaths!

Unfortunately reliable data on pedestrian volume is not available, but experience indicates that, except for ten weeks during winter months, pedestrian traffic volume drops more at night than does vehicular movement.

Judging by the daytime pedestrian fatality rate, Connecticut should have had only 13 night pedestrian fatalities in 1944 instead of the 87 that occurred. This leaves a total of 74 night pedestrian fatalities which cannot be accounted for by traffic exposure alone.

By and large, streets and highways are the same at night as in the daytime, changing not at all with respect to length, width, horizontal or vertical curvature, or obstruction to vision. There is the same human element except that there are likely to be fewer aged and extremely young persons on the streets at night. The principal difference between day and night traffic conditions is the decrease in traffic at night (a safety factor) and the greatly reduced efficiency of our prime safeguard—*vision*.

Rather than let the case rest on the broad statement that poor visibility was the cause, or at least the greatest contributing factor in these night fatalities, a critical study was made to determine the illumination values at the exact scene of the fatalities.

**Several conclusions in this survey are especially impressive:**

*First:* That dark hour visibility demands lower speeds than does daytime visibility, and that the average motor vehicle operator fails to adjust himself to restricted night visibility.

*Second:* That the rate of night pedestrian deaths is almost ten times greater than the day rate.

*Third:* That eighty-six of the eighty-seven night fatalities occurred in areas where illumination was inadequate.

*Fourth:* That the cost of accidents caused during dark hours exceeds the cost of adequate illumination.

WILLIAM M. GREENE
Director, Connecticut
Highway Safety Commission

In a larger number of instances, the amount of illumination was determined by actual measurement with an illuminometer. In other instances the amount was calculated from illumination curves or by comparison with similar luminaires where measurements had been made, while in a few instances there were no fixed lighting facilities to be measured or calculated.

This lighting survey disclosed the rather startling fact that in only one instance out of the 87 did the maximum intensity of illumination at the scene of the accident equal that recommended by the Street Lighting Committee of the Illuminating Engineering Society. In the areas where readings were obtained, the range of maximum intensity was from .01 footcandle to, in one instance, 3.1 footcandle. For the most part intensity was 0.2 footcandles or less.

Illumination intensities of 0.2 footcandle or less are not high enough to enable the eye to register a hazardous situation quickly enough to avoid an accident at prevailing night speeds.

There are streets and highways in this state constructed to permit the high speed our cars are capable of, but generally not in mental comfort and certainly not in safety.

### "Low Speed Visibility"

The public too often takes undue advantage of highway improvements, restrained only by legal speed limits and the degree of enforcement of these limits. As a result, we have today high speed cars and highways but only low speed visibility at night and even that in limited areas only. By this we mean the illumination at night from fixed street lights or automobile headlights, or both, is such that no operator can drive at speeds higher than 30 miles an hour with reasonable safety.

The average night speed is approximately 10 percent lower than the average day speed, but this is not enough to compensate for the greatly reduced distance visibility at night.

### Better Lighting Reduces Accidents

A beacon of hope pointing the way to improvement is the night pedestrian fatality record in Connecticut's four major cities, Hartford, New Haven, Bridgeport, and Waterbury, which combined have some 50 miles of improved street lighting.

These 50 miles of thoroughfares carry approximately 40 percent of the total city traffic of these four cities. In 1944 there was not one night pedestrian fatality on these 50 miles of well-lighted streets, while on the other thoroughfares, none of them well lighted though they carry 60 percent of the traffic, there were 18 night pedestrian fatalities. The lighting on these 50 miles of well lighted streets closely approximates .65 lumens per square foot compared to the average of 0.2 or less

World War I memorial.

## Make Your Memorial Shout "FREEDOM"!

In your hands is the goal every GI is fighting for—his own home town! He wants it as he remembers it, yet progressive and improved.

You can give it to him that way, in a memorial that honors him and benefits the loved ones he fought for—in a Public Safety Lighting System. This memorial will honor him 365 days a year, and it will help his family and friends in a way he would want. It will help to free them from crime, burglaries, robberies, traffic disasters. It will be a big step toward the fuller life he seeks for them.

This memorial is one which will live as the mark of a good administration, which wipes out the darkness to control delinquency and disorder.

Many civic officials are studying this project with the help of Westinghouse street lighting engineers, who have lifetimes of experience in this work. These engineers bring information from other municipalities, which shows the need and pictures the results.

Good public safety lighting is fully described in a new book which contains facts helpful to civic leaders. Ask your electric power company for your free copy of "Target for Tonight" or write to Westinghouse Electric & Mfg. Co., P. O. Box 868, Pittsburgh 30, Pa. J-04030

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existing in the majority of the areas where the fatal accidents occurred.

Since this improved lighting was put in service a few years ago, there has been a reduction of 60 percent in the night traffic accident rate and a 90 percent reduction in night traffic fatality rate on these streets alone.

The annual saving from reduced night accident costs is several times more than the added cost of the improved lighting. There are several methods of evaluating the economic loss of an accidental fatality. If we assume the conservative estimate of $10,000, the state suffered an economic loss of $740,000 due to the 74 excessive night pedestrian fatalities. This sum would meet the annual charges for lighting 600 miles of streets and highways—a safety measure which would prevent many fatalities as well as other traffic accidents.

The record of night pedestrian fatalities for 1944 was simply a repetition of the record of previous years and also an indication of what 1945 and succeeding years will produce unless the public will recognize:

First, good visibility and moderate speed play the prime roles in the prevention of night traffic accidents; and

Second, the cost of providing good visibility is considerably less than the cost of the night accidents caused by lack of visibility.

# Higher Levels for Street Lighting

## *The Brownout Is Over But Streets Are Still Too Dim*

*Street lighting as it existed before the war is now returning in cities throughout the country. Typical of pre-war traffic safety lighting are streets in Raton, N. Mex, (left), and Alameda, Calif, (right).*

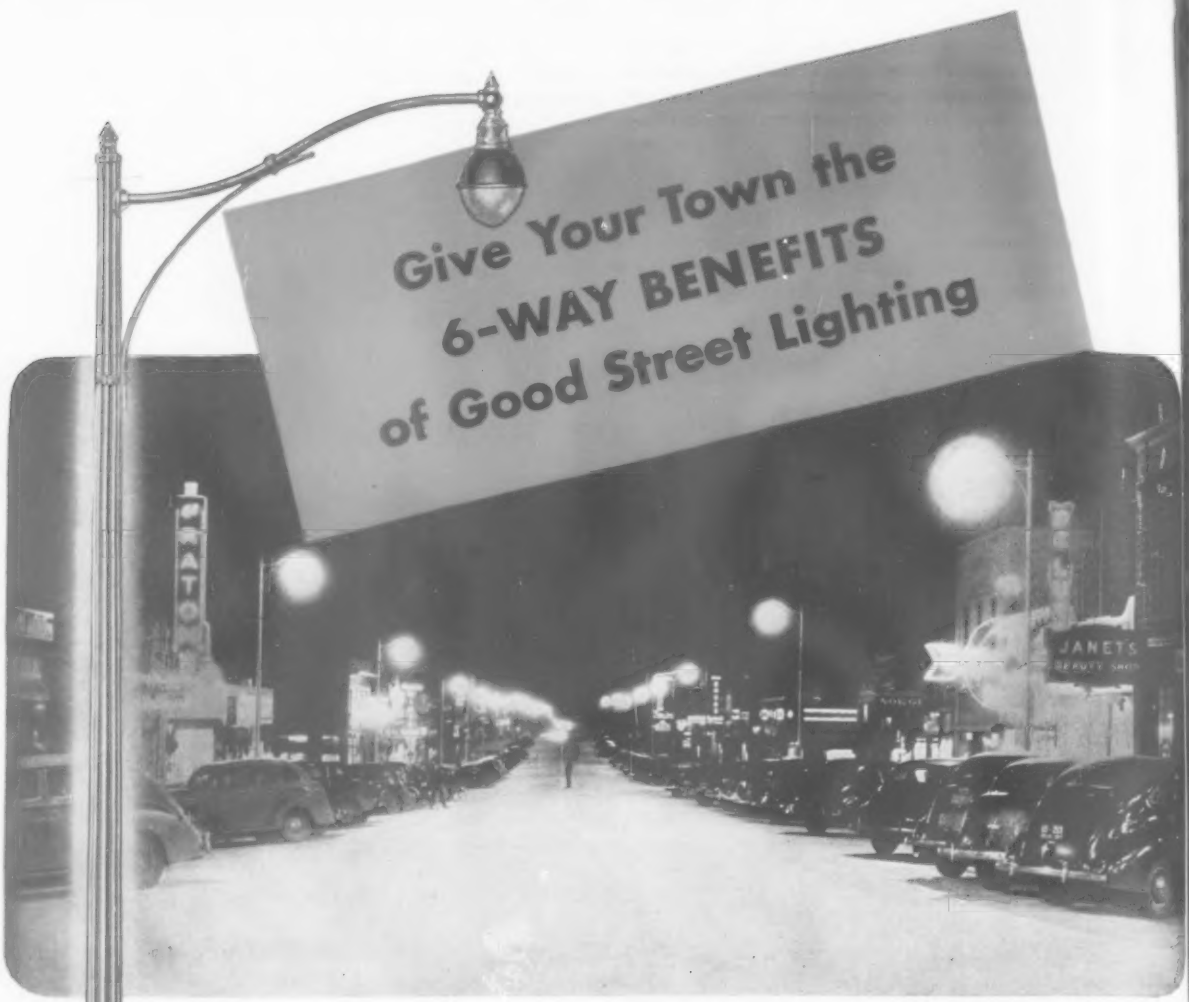
ON February 1, 1945: Dim the lights in Boston, New Orleans, Seattle, and Galveston, and all the cities, large and small, between these points; let the street lamps burn for public safety, but turn off the lights of theatre marquees, advertising displays, and store windows. Dimming the nation began with the war, back in 1941. Bans were issued and lifted as necessity for precaution existed. Last February Washington put the brownout order into effect nationally. The fuel problem was acute. Fuel had to be conserved for production for two major wars. In those three months it is said that 500,000 tons were conserved.

Then, May 8: V-E flashed throughout the world. It means Victory—Europe and promised visibility—eventually. Lights could and did go on in New York, Milwaukee, San Francisco, Houston, Miami, and all the cities, large and small. The national brownout was cancelled by recent government orders. Main streets, side streets, harbors and great white ways glowed and gleamed again as in pre-war nights. However, excellent as many pre-war products were, street lighting, by and large, was not one of these. It was better than blackouts, dimouts, and brownouts, but mostly it wasn't traffic safety lighting and it did not sufficiently guide the night driver and his victim the night pedestrian. It helped but did not solve the problem of the hazards of the highway and street at night. All through the three black, dim, brown years, "plan post-war street lighting now" was advocated by the lighting industry, the Illuminating Engineering Society, and THE AMERICAN CITY.

The opening articles of THE AMERICAN CITY campaign were: "The Automobiles Are Coming," in May, 1943; "10% of Cities' Gas Tax Share Will Light All Danger Streets," in June; and "Plan Post-war Street Lighting Now," in July, 1943. The present article is the most recent. How many cities have made street lighting plans? THE AMERICAN CITY will publish them for the information and encouragement of other cities.

John L. Kilpatrick, illuminating engineer of the Westinghouse Corporation, recently remarked, "The brownout is demonstrating dramatically the street lighting deficiencies in our commercial areas. The present average illumination on the business streets of most cities should be stepped up 20 times. This is necessary both as an adequate safety precaution in areas where dense traffic increases night accident hazards and to heighten the outdoor 'eye appeal' which attracts customers to commercial establishments." Mr. Kilpatrick pointed out that street lighting in more than 90 percent of American communities is so dim that it fails to meet even the minimum requirements for safety. A nationwide re-lighting program is now underway to correct this condition as soon as civilian material becomes available.

At a meeting between the St. Louis Electrical Board of Trade and the St. Louis chapter of the Illuminating Engineering Society it was recommended that illumination for business districts be five footcandles. A minimum lighting for residential streets is 0.2 footcandle. Wartime and post-war developments in electric light sources and equipment make higher levels of street lighting economically practicable.




## . . . When War Ends

WHEN V-Day finally comes, and your town starts rebuilding for peace *and prosperity* . . . begin with a modern street lighting system.

Adequate street lighting will not only label your town as an up-and-coming community, but also return direct profits to your citizens six different ways: (1) By decreasing traffic accidents, crime and juvenile delinquency; (2) improving business; (3) attracting new industries; (4) promoting civic pride; (5) increasing real estate values; and (6) aiding police, fire department and hospitals.

And when your new street lights are installed on Union Metal tapered steel standards—you also get the added benefits of permanence, beauty, safety, and economical maintenance. Remember, more street lights are mounted on Union Metal standards than any other type. There's a reason.

For product information and help in getting your plans started, contact your electric utility, or write The Union Metal Manufacturing Company, Canton 5, Ohio.

# UNION METAL

*Largest Producers of Street Lighting Standards*

# Backpack Pumps Help "Keep Indiana Green"

By JAMES E. PENETON
Assistant State Forester
Department of Conservation
Indianapolis, Indiana

As with forest fires, so with most urban fires: the time and money spent to suppress a fire usually exceeds by far the time and money that could have been spent to prevent it from occurring. As with the suppression of urban fires, the first principle is to have an efficient fire department: trained men and the proper tools.

### Fire Fighting Tools

Because of frequently rugged terrain and absence of water, the tools for forest fire fighting are often even simpler than those at the command of the city fire department in fighting brush fires. In fact, forest fire may be regarded as brush fires on a grand scale. While some conservation departments own pumping engines, tank trucks and fog equipment, a great deal of the work is done with hand tools and appliances. These consist of rakes, flappers and backpack pumps.

Rakes are used to make a fire line in leaves and litter. The long-handled shovel can be used to scrape a fire line in leaves and light litter. It is also used to throw dirt on the fire to knock down the blaze. This is an important tool in mop-up work, for covering burning stumps and logs with damp soil. Flappers or beaters are valuable tools for combatting field fires. They are used to smother the flames in grass or weeds where it is slow and difficult work to construct a fire line. They consist of a piece of belting 12 x 18 inches, attached to a handle six feet long. The backpump is used to throw a stream of water on the fire and is effective for distances up to 20 feet.

We have used Indian fire pumps for several years in fighting outdoor, field, brush and forest fires. They are definitely an important part of the equipment used by our fire suppression crews. Each of our fire wardens is equipped with two of these fire pumps. In fighting a grass fire they are used to knock down the flames in order that men with flappers can extinguish the flames by beating them out or smothering them. In controlling brush or wood fires they are used to knock down the flames or dampen the fuel to slow the fire and make the heat less intense so that a fire line may be constructed to stop the progress of the fire. They are also used to extinguish fires on stumps or snags which if left within the fire line might permit a spark to be blown across the line. This of course is part of the mop-up work. Where the fire is burning slowly and the flames are small as well as in mop-up work they are used completely to extinguish the fire.

Because it is difficult to have an adequate supply of water on hand at all of the outdoor fires which we control it is necessary that we conserve what water we can carry to the fire, and make the best and most effective use of it. This makes it necessary that we use hand tools such as the flapper and fire rake for most of our work. The Indian fire pumps thus play a supplementary part in our fire control work because of the scarcity of water. Below are two types of fires on which the backpack pump is especially effective.

### Control of Spot Fires

*The Situation.* The wind is sufficiently strong to blow sparks across the fire line already constructed, setting spot fires in the adjacent unburned area.

*Method of Attack.* On all fires where such a hazard exists, some of the crew members should be given the job of patrolling the already constructed line and expressly watching for such spot fires. As soon as the area can be safely entered, the source of the sparks should be located and extinguished. If standing snags are responsible, they should be knocked down and extinguished with the backpump, or well covered with soil.

### Fire in Broomsedge or Weeds

*The Situation.* A fire has caught in a heavy stand of broomsedge or weeds; the fuel is dry, the wind is strong and variable, and the fire is traveling at high speed.

*Method of Attack.* Work on the flanks of the fire, trying to pinch it in to a point. Try to avoid getting directly in front of such a fire because of the danger of being trapped by the blaze. Use a backpack pump, applying the water sparingly but in sufficient quantity to knock down the most intense blaze. This permits other crew members to use their beaters and wet burlap to knock out the remaining blaze. Our motto is "Let's keep Indiana green."

## *Aviation Seminar for City Officials*

FIVE-DAY Aviation Seminars are running every other week at Parks Air College, East St. Louis, Ill., open to municipal officials and business men concerned with the development of aviation—with particular emphasis on airparks and small airports for personal flying.

The sessions include courses on trunk line air transport and the community and on the economic and business development that accompany the operation of an efficient network of airlines; the cost and method of operating Class 2 airports, including potential revenue, operating expenses and development of public interest and support; the advantages and disadvantages of personal plane ownership, and the financing and locating of airparks.

The seminar fee of $37.50 for each participant includes room and board. In addition, a flight training course is offered at $10 an hour. This is given to help business men and the city officials improve their understanding of aviation and to enable them to discuss it authoritatively.

Places are open for the seminars beginning June 4, June 18, July 9, July 23, and August 6. Any interested person is invited. Details can be secured by writing the college direct.

## *Irvington, N. J., Reports on Its Mark-Times*

FOLLOWING is a report on the operation of parking meters in the town of Irvington for the year 1944.

Total receipts for the year were $9,468.70. Total cost of maintaining the meters in good working order was $1,188.95. This sum included the cost of parts and the purchase of 24 new units.

The cost of service of handling collections from the meters was $261.25.

At the end of the year $7,898.28 was turned over to the town treasury. This makes a total of $27,398.28 turned over to the town since the installation of parking meters.

I wish to commend the Police Department for its vigilance in checking on violations.

JOHN J. GORMLY
Supervisor of Parking Meters

# PLAN SAFE STREETS for Your Community NOW!

One of the great trends sweeping the nation today is the demand for *improved* Traffic Safety Lighting . . . Now is the time to bring plans to the point of operation and specification. In your plan specify HOLOPHANE REFRACTORS to be assured of effective, enduring, economical performance.

*Effective* because refractors are designed to shape the light to the street . . . *Enduring* because they are made of strong pressed glass (no permanent depreciation) . . . *Economical* because they bring more Light where it is *most* needed.

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# Zoning and Planning Notes

Edited by FRANK B. WILLIAMS
Author of *The Law of City Planning and Zoning*

## *Residential District—Accessory Use—Conservatory*

MASSACHUSETTS.—*Kenney* v. *Building Commissioner of Melrose*, Supreme Court, December 28, 1943, reported in 52 N. E. (2d) 683.

Kenney was seeking a permit for a garage and small conservatory for his personal use in connection with his home in a residential zoning district in which district greenhouses are forbidden. The court finds that the term "greenhouse" does not include a conservatory attached to a private house for the personal use of the owner; and that such a conservatory may be constructed as an accessory use. In a conservatory, the cultivation of flowers is on a smaller scale than in a greenhouse, and for the pleasure of the owner, rather than for sale, as in the case of a greenhouse.

## *Radio Poles and Wires in Residential District*

MINNESOTA.—*Village of St. Louis Park* v. *Casey*, 16 N. W. (2d), 459.

This is a suit to enjoin the defendant Casey from maintaining in a residential district certain poles and wires for radio purposes which, it is alleged, are in contravention of the village zoning ordinance.

Defendant is a radio enthusiast. He conducts radio schools in various large cities in the United States and operates radio equipment under a federal amateur license in his residence in the village. There being no alleys in that part of the village, his lot, 3, abuts end to end on lot 22, also owned by him.

He has fenced and improved and is now using lot 22 in connection with lot 3 as the back yard of his residence.

On lot 3 Casey has installed in the basement of the house in which he lives an expensive amateur receiving and sending set, which he has not been permitted to use for transmission since the outbreak of the war with Japan. For purposes of radio reception and transmission, Casey erected a 30-foot pole in the rear of lot 3, in order to put up an antenna suitable for a short wave set. This was found to be unsatisfactory for certain distances and so he erected farther in the rear of his house and on lot 22, two similar poles with wires, and later extended the height of the pole farthest from his house 25 to 50 feet. This pole was connected with Casey's radio set by a wire running through his garage.

In further explanation it may be said that part of the equipment is effective within certain limited distances, other parts at greater distances.

It is the removal of the two poles on lot 22 that is sought, on the ground that they violate the zoning ordinance.

Without question the poles and wires are "structures" within the meaning of the ordinance.

The use of radios in private residences, with outside antennae or aerials for radio reception is as common as the use of refrigerators; and the use of poles or masts prevails when a householder seeks the best reception.

There is no evidence in the records that the use of Casey's set for transmission requires a change in the type of structure for long-range transmission; but even if it did, it would not alter the legal aspects of our problem. Neither the height nor the appearance of such poles nor their appurtenances are regulated by ordinance so long as they present no hazard to person or property. Whether the pole was short or long, the use was for the same purpose. If long, it was more effective in certain ranges.

No esthetic considerations are here involved. No relief is sought on the theory of nuisance or interference. On the determination of this branch of the case, the sole issue is one of customary use. That Casey's indoor equipment cost him nearly $10,000 does not present a difference in the kind of use to which he devotes his exterior equipment from that of the ordinary radio set. It is merely a question of degree.

There is no evidence that Casey's use of his amateur set is a business, or that he uses it for commercial or business purposes; he employs it solely for his personal enjoyment—an expensive hobby, but no business.

The foregoing leaves the plaintiff's action against Casey standing on the bald theory that the defendan'ts customary enjoyment of his residential establishment is restricted to the single plotted lot on which his residence stands. On this point the court rules that Casey's establishment comprises but one parcel or area appropriate for a residential estate; and a restriction to a single plotted lot would be arbitrary and unreasonable and consequently void.

## *Editor's Note*

In the above case the court, in comparing Casey's $10,000 radio equipment with the ordinary radio outfit, says that the difference is "merely a question of degree." Without questioning the correctness of the decision in this case, it should be remembered that differences of degree may be of such character or magnitude as to amount to differences in kind. This fact is often pointed out by the courts in cases with regard to conforming uses, many of which, as the reader will remember, have been summarized from time to time in these notes.

Thus, in the New Jersey case of *Home Fuel Oil Co.* v. *Borough of Glen Rock*, 102 Atl. 516, digested in these Notes for October 1937, the increase in the capacity of an oil tank from 100,000 to 440,000 gallons, was held to be not a permissible continuance, but a forbiddable change of use to one of a different kind.

In the New York case of *Matter of Vogl*, reported in *New York Law Journal* for July 12, 1937, page 111, digested in these Notes for October 1937, this principle is admirably stated as follows: "I am inclined to think that the extensive improvements contemplated by this application would practically result in changing the premises from a small and comparatively unobjectionable restaurant or tea room into a large roadhouse, and that this would be a change of a nonconforming use to a lower classification."

## *Residential Zoning District—Churches*

TEXAS.—*Simms* v. *City of Sherman*, Court of Civil Appeals, April 28, 1944, reported in 181 S. W. 2, page 100.

The pastor and trustees of the Church of God are seeking to use a structure in a residential zoning district of the city of Sherman as a church. This use is prohibited in such districts by the city's zoning ordinance, churches being given local retail classification. The church claims that in this respect the ordinance is arbitrary, discriminatory, and violative of both federal and state constitutions, the restriction having no real or tangible relation to the public health, safety, morals, or general welfare. This contention the Court sustains.

EDITOR'S NOTE.—Use districts are usually classified as residential, commercial, and industrial, such divisions of land concededly having a substantial relation to the public health, safety, comfort, and convenience. But from the beginning humanitarian or noncommercial uses such as churches, schools and hospitals have been admitted into residential districts. Bassett, in his book on zoning, page 200, says in this connection, "Practically all zoning ordinances allow churches in all residential districts. It would be unreasonable to force them into business districts where there is noise and where land values are high, or into dense residence districts. Some people claim that the numerous churchgoers crowd the streets, that their automobiles line the curbs, and that the music and preaching disturb the neighbors. Communities that are too sensitive to welcome churches should protect themselves by private restrictions."

South Bound Brook, N. J., has joined the growing number of small communities that have set up official planning agencies. By ordinance enacted last month, this municipality of about 2,000 population has created a five-man Planning Board which will consist of the Mayor acting in an ex-officio capacity, one member of the Council, and three laymen.

Bound Brook (about 8,000 population), which South Bound Brook adjoins, has a master plan prepared in 1931 by planning consultant Russell Van Nest Black.

# How to attract TOMORROW'S SITE SEEKERS

AFTER the war many big manufacturers plan to branch out into small towns.

This means that communities which never before had year 'round industry will get their big chance to grow.

To qualify, however, communities must offer the values which industrial site seekers desire—living conditions attractive to labor, progressive merchants, adequate police and fire protection, and streets that are safe after dark for pedestrians and motorists alike.

Key to many of these values is adequate street lighting. It aids the police and fire departments by reducing night traffic accidents and by extending daytime visibility around the clock. It helps build business by encouraging night window shopping and by making the outdoors safer for women and children all the time. It gives the whole community an aspect of wide-awakeness that can't be gained in any other way.

Yes, if you want to attract postwar industry you will want the benefits that good street lighting will offer. Your electric utility company can help you plan for improved street lighting to fit your budget as well as your needs. Get in touch with them today, or write The Street and Traffic Safety Lighting Bureau, 155 East 44th Street, New York 17, N. Y.

**GOOD STREET LIGHTING ATTRACTS NEW INDUSTRIES**

# Municipal Law Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS, Washington, D. C.
Charles S. Rhyne, *Executive Director*

### Beer—Prohibiting Sale to Minors—Purchase by Adult

Under an ordinance prohibiting the "sale" of beer to minors where two male adults bought and paid for four bottles of beer from defendant, but two bottles were drunk by two girls under 18, held that defendant, not having transferred any beer to the girls for a consideration, did not violate the ordinance, the court agreeing that such an interpretation emasculates the ordinance. *City of Madison* v. *Pendleton*, 17 N. W. (2d) 580 (Wisc. Feb. 13, 1945).

### Civil Service—Maternity Leave—Seniority Rights

Where plantiff obtained maternity leave as provided by the civil service rules of the City of Minneapolis, but during her absence discharges were made due to reduction of the staff and the rules were thereafter amended to provide seniority rights in such a case only to recertification, held that plaintiff was entitled to her seniority rights as previously existing and thus entitled to reinstatement since employees who had less tenure had not been laid off. *State ex rel. Coduti* v. *Hauser*, 17 N. W. (2d) 504 (Minn. Feb. 9, 1945).

### Civil Service—Noncompliance with Charter in Filling Vacancy

Where a complaint states that the defendant had retired because of age from the position of secretary to the Board of Estimate of the City of Minneapolis and the Board rehired him as a "technical consultant" outside of the classified service, held that since defendant is performing the same duties as previously performed, his contract of hiring could be annulled and the complaint thus states a cause of action. *Cranak* v. *Link*, 17 N. W. (2d) 359 (Minn. Dec. 29, 1944).

### Curbing—Bus Terminal—Defect

Where plaintiff was injured in a fall resulting from stepping from a platform in a bus terminal onto the street, held that the rounded curbing separating the platform from the street surface was not a "defect or want of repair" in the public way so as to render the city liable. *Risk* v. *City of Boston*, 59 N. E. (2d) 184 (Mass. Jan. 31, 1945).

### Firemen—Fine for Misconduct—Jurisdiction for Review

Where a fireman of the City of New York was served with written charges and after a hearing found guilty upon two charges of misconduct and fined as a penalty, his petition for an order to review and set aside the order imposing the fine should have been filed in the Appellate Division and not Special Term. *Farinella* v. *Walsh*, 53 N. Y. Supp. (2d) 291 (N. Y. Sup. Ct. Special Term. Feb. 8, 1945).

### Gambling—Ordinance Prohibiting—Ultra Vires Act

Where the city charter empowered the council to close gambling houses and to expel or imprison bunco and lottery men and defendants were convicted of violating an ordinance prohibiting gambling at cards, held that the ordinance was void because it was ultra vires. *City of Bogalusa* v. *Sallis*, 20 So. (2d) 808 (La. Dec. 11, 1944). Reh. Den. Jan. 15, 1945.

### Housing Project—Workmen's Compensation Insurance—Premiums For

Under a contract with the public housing authority of the City of Houston whereby the contractor agreed to pay all costs to complete the entire work, and a subcontractor bound himself to the general contractor under the same terms, held that such a contract did not include premiums for workmen's compensation insurance since it was not part of the "work" agreed to be done. *Knox* v. *Ball*, 185 S. W. (2d) 124 (Tex. Civ. App. Dec. 21, 1944). Reh. Den. Jan. 24, 1945.

### Jehovah's Witnesses—Disorderly Conduct—Distributing Literature in Apartment Houses

Conviction of disorderly conduct in violation of an ordinance of the City of Minneapolis held not to be supported by the evidence where it was shown that defendant, a Jehovah's Witness, had distributed his literature in an apartment house having a "No Solicitors" sign, had quietly refused to stop when told by the manager to get out, and had, in a quiet and orderly manner, told the arresting officers that his work was not solicitation. *State* v. *Korich*, 17 N. W. (2d) 497 (Minn. Feb. 2, 1945).

### Physicians—Malpractice of—City Hospital—Liability

Under a statute permitting an action against the city, and assuming liability for malpractice of any physician rendering medical service gratuitously in a public institution maintained by the city, where plaintiff sought to recover from the city and the physician, alleging that she was a paying patient, held that by alleging an action against the physician plaintiff could not recover against the city since the services were not gratuitously rendered. *Mackrell* v. *City of New York*, 52 N. Y. Supp. (2d) 844 (N. Y. Sup. Ct. Queens Co., Dec. 14, 1944).

### Poll Tax—Illegal Assessment—Injunction

In a suit to restrain the town collector of taxes from enforcing collection of a poll tax alleged to have been illegally assessed, held that the petitioner was not a legal resident of the town and an injunction would issue to enjoin collection since the tax was illegally imposed and the person was not subject to taxation. *Beebe* v. *Town of Rupert*, 41 Atl. (2d) 149 (Vt. Feb. 6, 1945).

### Public Service Commission—Reopening Hearings on Its Own Motion

In an action by the city for an order prohibiting the State Public Service Commission from proceeding with hearings concerning elimination of grade crossings, where original hearings had begun in 1930 and 1939 with final orders handed down in 1938 and 1940, held that the Commission could, on its own motion, reopen and review its final determination even if it involved a complete change in the final order. *City of New York* v. *Maltbie*, 53 N. Y. Supp. (2d) 234 (N. Y. Sup. Ct. N. Y. Co. Jan. 6, 1945).

### Salaries—Police Officers—Right to Salary Plus Fees

Under an ordinance providing that the fees to which a member of the police department might become entitled to as a witness or for making arrests should be turned into the city treasury, but plaintiffs sought to recover the fees they had paid in, held that the ordinance was valid under statutes fixing compensation of city officers and plaintiffs, by accepting the office with a fixed salary, could not claim additional compensation. *Anderson* v. *City of Rockford*, 59 N. E. (2d) 327 (Ill. App. Feb. 8, 1945).

### Sidewalks—Guardrails—Maintenance of—Negligence

Where plaintiff, a minor, sustained injuries when a guardrail, maintained by the city to protect travelers from a hole near the sidewalk, broke and gave way while he was swinging from it, held that evidence that the city had not inspected the guardrail did not show negligence in its maintenance where there was no evidence that anyone had seen anything wrong with the rail prior to the accident. *City of Whiting* v. *Grindle*, 59 N. E. (2d) 360 (Ind. App. Mar. 1, 1945).

### Sidewalks—Notice of Claim—Failure to Comply with Statute

Where plaintiff sought to recover damages for injuries sustained when her foot caught in a hole in the sidewalk but her notice of claim did not state the amount of damages sought as required by statute, held that the statute was mandatory and was not unconstitutional because it worked a hardship. *Freeman* v. *City of Minneapolis*, 17 N. W. (2d) 364 (Minn. Jan. 26, 1945). (Reh. Den. Feb. 21, 1945.)

### Streets—Obstruction of—Parking Buses

Where defendant was found guilty of wilfully obstructing a public road by parking buses therein, held that the city streets of the City of Miami are within the term public roads and a "partial obstruction," if wilful, is within the statute. *State ex rel. Frazier* v. *Coleman*, 20 So. (2d) 911 (Fla. Feb. 9, 1945). (Reh. Den. Mar. 5, 1945.)

### Utilities—Purchase of—Issuance of Bonds without Election

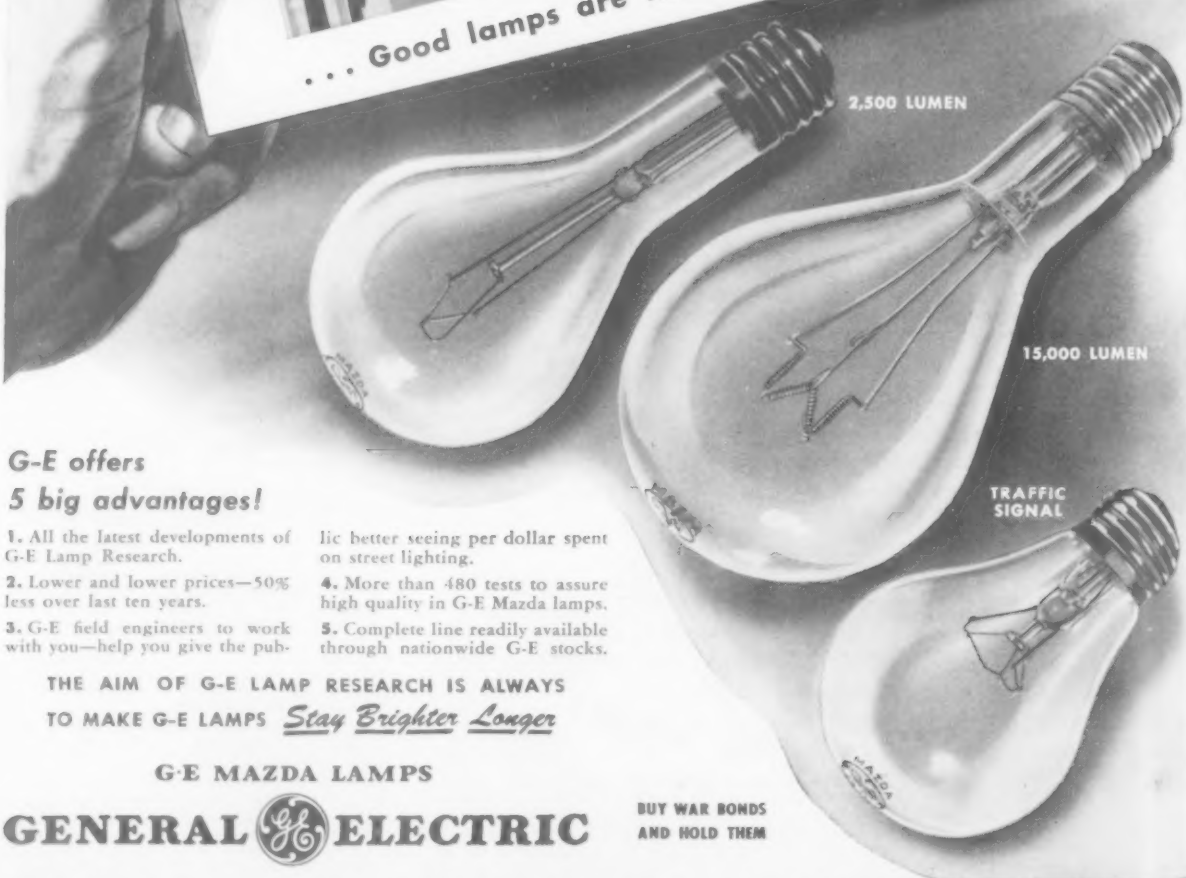
In an action by taxpayers to enjoin the issuance of bonds to pay the cost of the purchase of an electric power plant, where a statute authorized the issuance of revenue bonds for such a purpose but the electorate disapproved the proposal, held that the city would be enjoined from issuing the bonds since they were actually revenue bonds although designated general obligation bonds. *May* v. *City of Kearney*, 17 N. W. (2d) 448 (Neb. Jan. 23, 1945).

### Water Rights—Disturbing Use of Dam for Power

Where, at the time the original, common grantor had reserved to himself and heirs the right to keep a millpond, he was using power from the dam and the grantee distributed water but without interference to the water power, held that the city, tracing title from grantee, could not draw off water into the city's water preserve in an amount so as to ruin the use of the dam for power purposes. *City of Elkhart* v. *Christiana*, 50 N. E. (2d) 353 (Ind. Feb. 28, 1945).

*This is how G-E lamps, plus good equipment and proper maintenance help provide modern traffic safety lighting in Toledo, Ohio. Good street lighting marks a good place to live; plan for it postwar.*

**. . . Good lamps are the heart of good street lighting**

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# Municipal and Civic Publications

## Planning for Post-War Municipal Services

PLANNING FOR POST-WAR MUNICIPAL SERVICES: AN ANALYSIS OF PROBLEMS AND TRENDS WITH SUGGESTIONS FOR DEVELOPING LOCAL POLICIES. *International City Managers' Association, 1313 E. 60th St., Chicago 37, Ill.* 1945. 90 *pp.* $2.

An analysis of some of the current and probable future problems and trends in the fields of municipal activity, for the purpose of suggesting ideas that will stimulate the thinking of municipal administrators and councils in developing sound local policies and plans for improving local facilities and services.

Today cities are in the best financial condition in 25 years, with increased revenues, less debt, and post-war financial reserves, Clarence E. Ridley, Executive Director of the Association, points out; but operating costs have increased in spite of the fact that a large volume of municipal work has been deferred and present services do not reflect post-war conditions. At the completion of the war, when deferred projects will be undertaken, he points out that new and aggravated problems will require attention in many fields of municipal activities.

In 16 articles by leading authorities, the chapters outline the extent of municipal responsibility, anticipate post-war conditions and needs, indicate services that may be expanded, abandoned, or transferred to other units, suggest the sort of questions and problems that should be answered locally, and outline methods of making plans. Some authors point out lessons to be learned from wartime experience and suggest improvements in organization and management techniques. These articles appeared originally in *Public Management*, ending in the April 1945 issue. A list of selected references is included as a guide to municipal officials who want additional information on specific suggestions in developing local plans.

## An Improved Community Through Public Housing

THE SOCIAL EFFECTS OF PUBLIC HOUSING.—*Study conducted by Dr. Jay Rumney, Professor of Sociology, University of Newark, and Consultant to the Housing Authority, and Sara Shuman, M. A., the Authority's Research Associate. Housing Authority of the City of Newark, 57 Sussex Ave., Newark 4, N. J. November* 1944. *Illus.* 95 *pp. Limited supply available for free distribution upon request.*

How public housing in Newark is improving the health and social life of rehoused families is revealed in this survey prepared by the Newark Housing Authority. Three housing projects were selected for studying the social effects of rehousing families coming from substandard dwellings. Two methods were used: The first was to compare the health and social conditions among the families living in the public housing projects with the conditions that prevailed among them before they were rehoused; the second method was based on a comparison of the conditions of project families with residents living directly outside of the projects, on the same social-economic level.

In determining the social effects of housing, comparisons were made of the health conditions, fire rates, school records, and other indices such as birth rates and delinquency rates. In addition, a sample of 71 rehoused families, representing 5.5 percent of the families living in the three projects studied, were interviewed. Sixteen families awaiting admission to a project were also interviewed.

The study shows, the report states, that public housing has had beneficial effects on the rehoused families and on the community. Every reduction in disease and accidents not only means a great diminution in suffering and unhappiness, but a tremendous saving in dollars and cents to the community.

## Facts for the Discharged Service Man

VETERANS' GUIDE.—*By Dallas Johnson. Public Affairs Pamphlet No. 102. Public Affairs Committee, 30 Rockefeller Plaza, New York 20, N. Y. April* 1945. 32 *pp.* 10 *cents.*

A timely handbook intended to help the returning service men, whether able-bodied or handicapped, to pick up the threads of their civilian lives with the least possible confusion. Ex-service men and women are told, in this pamphlet, not only what their legal rights are, but also how to make the most of them, how to avoid red tape, and where to go for further help with their individual problems. This is a sequel to Dallas Johnson's pamphlet *Facts and Tips for Service Men and Women*, prepared by this Committee last year, which dealt with rights and privileges while in service.

This pamphlet tells the veteran how to go about getting a former job back, where to look for a new one, and how to determine the kind of a job for which he is best fitted. Preference for veterans in civil service appointments is explained; and there is an analysis of the chances for getting good wages and for keeping a job, once it has been found. It discusses the pros and cons of buying a house, and the problems involved in getting a farm or going into business are also explored. The rights of veterans in borrowing money, continuing their education, obtaining medical care and disability pensions are answered in this publication.

A chapter is devoted to the rights and benefits of the merchant seamen.

## Demobilization of the Armed Forces

VETERANS.—*In* Building America, *Vol. X, No. 4. January* 1945. 2 *W. 45th St., New York 19, N. Y.* 30 *pp.* 30c.

A factual and illustrated presentation of the preparation that has been made to take care of the returning serviceman, together with a plea for a proper understanding of the men who are and will be discharged from the armed forces. A quotation contained in the article from "The Road Back," published in *This Week* effectively states, "Always in the past we have bungled this problem of justice and help for the returning soldier. . . . Yet it did not have to be so! The veteran's needs are simple. We can solve the veteran problem if we try."

The veteran's problem in American history is traced, and past experience is contrasted with the problem as it exists today. If peace comes by 1947, it is estimated there will be 15 million veterans of World War II, or more than double the number that fought in all our previous wars put together. The steps which have been taken to provide for the serviceman's needs with vocational, health, financial and other assistance are outlined. Included is a bibliography of current publications on the subject.

## Government War Publications: Bibliography

OFFICIAL WAR PUBLICATIONS: GUIDE TO STATE, FEDERAL AND CANADIAN PUBLICATIONS. *Volume VIII.—By Jerome K. Wilcox, Associate Librarian. Bureau of Public Administration, University of California, Berkeley, Calif. October* 1944. 296 *pp.* $2.

The eighth in a series of volumes prepared to aid government agencies, librarians, students, and others in locating published material of World War II from official sources. This latest report, which may be the final in the series, indexes and lists federal, state and Canadian publications up to June 1, 1944, adding 3,000 new items to the previous volumes.

## Good Advice for Land Reformers

CONFRONTING THE LAND QUESTION.—*By Jackson H. Ralston. Published by The American Association for Scientific Taxation, Bayside, N. Y. Distributed by the Robert Schalkenbach Foundation, 50 East 69th St., New York, N. Y.* 1945. 104 *pp.* $1.

A valiant and venerable warrior for land reform—now in his 89th year—has here produced a treatise which ought to have a place in every library alongside of "Progress and Poverty." Accepting that great work as an eloquent and conclusive demonstration of the right of every man to his fair share in the use of the earth, Judge Ralston's chief concern for more than half a century has been with practical methods for putting the fundamental principles of Henry George into practice.

As a realist, the author has long recognized the fact that only a veritable and dangerous revolution could result from the instantaneous taking by the community of all property in land. He also knows—what many "Single Taxers" seem to ignore—that much has happened since George's day which would doubtless have resulted in a somewhat different book, if "Progress and Poverty" had been written in 1945 instead of in 1879.

In "Confronting the Land Question," Judge Ralston propounds twelve next steps which seem to the present reviewer to provide the soundest advice now available in any single treatise on the fiscal and humanitarian phases of land reform. H. S. B.

## For Human Rights and a Happy Life

THE BEST IS YET. . . .—*By Morris L. Ernst. Harper & Brothers, 49 East 33rd St., New York, N. Y. April* 1945. 291 *pp.* $3.

Books have been written by tired radicals and by disillusioned reformers. Here is one by an irrepressible fighter whose zest for human rights and for a full and happy life for all mankind—himself included—seems unlimited.

In the 47 chapters of "The Best Is Yet. . . ." Lawyer Ernst hops gayly around from warring against censorship to the joys of home carpentry; from battling against racial discrimination to his "violent addiction" to cruising; from advocacy of planned parenthood to the "rhythm of bowling."

An intriguing human document, this book has also much of special interest to readers of THE AMERICAN CITY—its discussions, for example, of New York's "worst best mayor," of "I'm-the-law Hague," and of the relation of the public schools to city planning.

## The Modern Museum

BABEL'S TOWER: THE DILEMMA OF THE MODERN MUSEUM.—*By Francis Henry Taylor. Columbia University Press, 2960 Broadway, New York, N. Y. February* 1945. 53 *pp.* $1.

The public is no longer impressed and is frankly bored with museums and their inability to render adequate service, according to the author of this stimulating little book. "We have reached," says Mr. Taylor, "a critical period in American museums, and it is impossible for us to continue as we have done in the past. The public have had their bellyful of prestige and pink Tennessee marble. Furthermore, they resent the spending of vast sums of tax-levied or tax-exempted funds for the interest and pleasure of an initiated few. . . . We must consider our responsibilities in terms of twentieth century America. Perhaps in doing so we may develop a totally new type of public institution, bearing little or no relation to the nationalized palaces of Europe."

For every municipal official concerned with the planning or administration of a public museum this book is a must.

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## Proposed National Airport Legislation

THE MUNICIPAL AIRPORT IN THE NATIONAL AIRPORT PROGRAM.—*United States Conference of Mayors, 730 Jackson Pl., Washington, D. C. March 1, 1945. Illus. 16 pp.*

To promote legislation which has been placed before Congress to implement a national program of airports, based upon facts and research by the Civil Aeronautics Administration, the United States Conference of Mayors in this booklet presents the "facts and figures" of the program. The booklet discusses the role of the municipal airport in a nation-wide system of airports, in national defense, postal service, air transportation, private and commercial flying, and in employment.

According to the CAA, there is today in the United States a total of 3,086 airports. Peacetime development of aviation, it is predicted, will require at least twice that number within 5 to 10 years after the war, plus enlargement and improvement of 1,625 existing airports. There are at present only 286 places which are approved stops on scheduled airlines, and, under the CAA plan, there would be 1,827 cities with airports which could accommodate air transport operations.

Proposed legislation would require states or political subdivisions thereof to contribute one-half the cost of building the airports. If such beneficiaries match in full an annual federal appropriation of $100,000,000, the nation-wide program, it is foreseen, could be completed within five years.

## Should Hospitals Be Taxed?

THE TAXATION OF HOSPITALS.—*Publication No. 68. Research Department, Illinois Legislative Council, Springfield, Ill. March 1945. Mimeo. 22 pp.*

A discussion of tax-exemption of hospitals in Illinois and in other states. Because of their charitable nature, many hospitals have been exempted from taxation. This booklet raises the question as to whether some charitable institutions are not fully reimbursed for their contributions to charity while others are over-remunerated. In this report the laws and provisions for tax-exemption in the various states are summarized and a policy for appraising a state's exemption policy is set up.

## Urban Redevelopment Legislation

STATUS OF URBAN REDEVELOPMENT LEGISLATION, MAY 9, 1945.—*The Urban Land Institute, 1737 K St., N. W., Washington 6, D. C. Mimeo. 2 pp. and 2 charts. 25 cents to non-members of the Institute.*

A compilation of bills which have been introduced recently, passed since 1941, or killed. The work is divided into three categories: Redevelopment Corporation Laws, Housing Redevelopment Laws; and Redevelopment Land Agency Laws. Supplemental charts show the features of fourteen typical redevelopment laws in fourteen different states.

## Measuring the Quality of Housing

AN APRAISAL METHOD FOR MEASURING THE QUALITY OF HOUSING: A YARDSTICK FOR HEALTH OFFICERS, HOUSING OFFICIALS AND PLANNERS.—*Part I. Nature and Uses of the Method. American Public Health Association Committee on the Hygiene of Housing, 1890 Broadway, New York 19, N. Y. 1945. 71 pp. $1.*

The first of three booklets in this series. One of its functions is to facilitate the intelligent application of the procedures of health departments, building departments, fire departments, and other law enforcement agencies in the selection of structures subject to orders for condemnation or rehabilitation and in the support of such orders. It can be used as a check on present inadequate building and housing codes, with a view to their future improvement. Part II and Part III of this series will be entitled *Appraisal of Dwelling Conditions and Appraisal of Neighborhood Environment.*

(See page 96 of this issue)

## A New Planning Guide Book

PLANNING YOUR COMMUNITY.—*A Manual of Suggestions for Practical Community Planning. By C. Earl Morrow, Acting Executive Director. Regional Plan Association, Inc., 205 E. 42nd St., New York 17, N. Y. 1945. 42 pp. 50 cents.*

A handbook which should prove useful for any community—its citizens, civic leaders, and public officials—in its planning program. This is a successor to the Association's "Community Planning" booklet by Wayne D. Heydecker and W. Phillip Shatts. A new feature of the revised manual is a list of "Suggestions" under each subject containing tips on helpful shortcuts and warnings of common pitfalls. There are four sections: Why Plan?; How to Organize; How to Plan; and Carrying Out the Plan. A comprehensive bibliography is included.

## Post-War Building Program

PROCEEDINGS OF THE CONFERENCE ON FINANCING THE POST-WAR BUILDING BOOM ON A SOUND BASIS. *December 7, 1944. National Committee on Housing, Inc. 512 Fifth Ave., New York 18, N. Y. 80 pp. $1. 60c to NCH members.*

A record of the proceedings of a conference attended by realty finance leaders to initiate action to avoid haphazard planning and jerry-building in the post-war period. The need for uniform construction standards and mortgage loan practices in the residential building field were discussed. In order to stimulate acceptance of increasingly higher standards of appraisal practices, construction and site and subdivision planning, the Committee has recommended that joint state-wide conferences be held at which representatives of lending institutions would deliberate with all interests concerned in the post-war building program as the first step toward reaching agreement on appropriate standards and practices. It is hoped that this conference has set the pattern for similar meetings to be held in other states.


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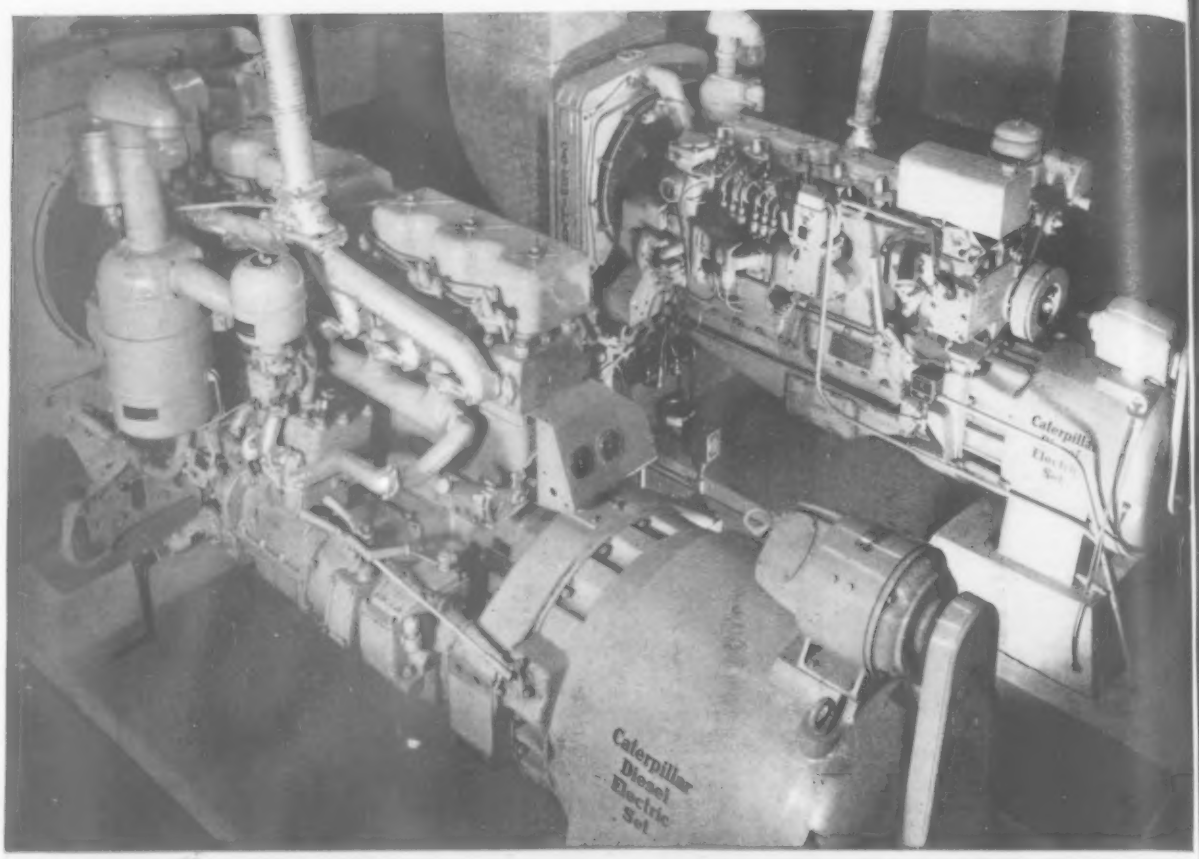


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## Improving the Country's "Main Streets"

MAKING OVER MAIN STREET.—*By P. V. Lambdin. In Shell Progress, January-February issue, 1945. Shell Oil Company, Inc., 50 West 50th St., New York, N. Y. Illus. 7 pp.*

Fifth in a series of post-war studies by the Shell Oil Company, this well illustrated article tells clearly and concisely what is meant by community planning. "Farmer, city dweller, and suburbanite plan for a nation of neighborhoods, where good living is good business," it states. This article touches briefly on many phases of community planning and is designed to stimulate citizen interest in community planning. It traces the haphazard development of an unplanned community beginning with its Main Street and cites many recent developments in the United States to improve its communities, notably Syracuse's master plan, TVA regional planning in the South, conversion of a race track into a community in Coatesville, Pa., community shopping center in a FPHA war housing development in Vancouver, and others.

## Employment in Planning Field

PLANNING JOBS AND JOBS IN PLANNING.—*By Otto H. Ehrlich, Brooklyn College. Monograph No. 54. Bellman Publishing Company, Inc., 6 Park St., Boston 8, Mass. 1945. 40 pp. $1.*

One of a series of 75 Vocational and Professional Monographs, this booklet will be of value to those interested in employment opportunities in the planning field and to those concerned with personnel guidance activities. The author describes the most modern ideas being applied to local, state, and regional planning; land, water, and energy planning; social planning; industrial planning; and national and international planning. Part 2 of the monograph supplies information about the duties of the various planning position classifications, personal qualifications and educational training required, remunerations, chances for advancement, etc.

## United States Guide Book

AMERICAN HANDBOOK.—*Prepared by the Office of War Information. Public Affairs Press, Washington, D. C. 1945. 508 pp. $3.75.*

Absorbing reading material, as well as an informative reference book, this up-to-date account of the United States and the Government brings together the most significant facts about America's past and present. Although it contains a considerable amount of special material about the country during wartime, the handbook is unique in that it presents this material in terms of the whole American story. Originally prepared for the outposts of the Office of War Information throughout the world, it has been adapted for American consumption.

In its 38 chapters, not only does this volume describe concisely the functions of the various federal, independent and cooperating agencies, the Army, and Navy, their units, insignias, weapons, etc., but it also includes chapters on Lend Lease, Civilian Defense, Domestic and Foreign Principles, Historical Highlights up to July 1943, The People, Geography, Raw Materials, Conservation, Industry, Finance and Trade, Power, Transportation, Public Health, Housing, Recreation, Religion, Education, Stage and Screen, Radio, Art and Architecture, and other topics, down to Significant Facts.

## Cost Accounting for Institutions

INSTITUTIONAL COST ACCOUNTING.—*By Walter O. Harris, C.P.A. Public Administration Service, 1313 E. 60th St., Chicago 37, Ill. 1944. 153 pp. $3.00.*

A monograph based on the system in operation at the Eloise Hospital and Infirmary, Wayne County, Mich., which institution contains three separate units: a psychopathic hospital, a home for the indigent, and a general hospital. Some of the local procedures followed at Eloise have been changed in this report so as to give it wider applicability, and the general pattern of the records and procedures described are such that they might be suitable for other types of institutions.

## Control of Mosquitoes in New Jersey

THE MOSQUITOES OF NEW JERSEY AND THEIR CONTROL.—*By Thomas J. Headlee. Rutgers University Press, New Brunswick, N. J. May 1945. Illus. 326 pp. $4.*

An invaluable tool for sanitary engineers, public health officials, entomologists, and mosquito control workers. For more than 30 years Dr. Headlee has been a leader in mosquito research and control. The first section of this book deals with the classification, description, and biology of mosquitoes as found in New Jersey, where Dr. Headlee's success has been a pattern for the whole country. The second section includes chapters on the history of mosquito control; principles involved in mosquito control measures; larvicides; repellents; laws relating to mosquito control; and the economic effect of mosquito reduction.

## Public Administration Pamphlets

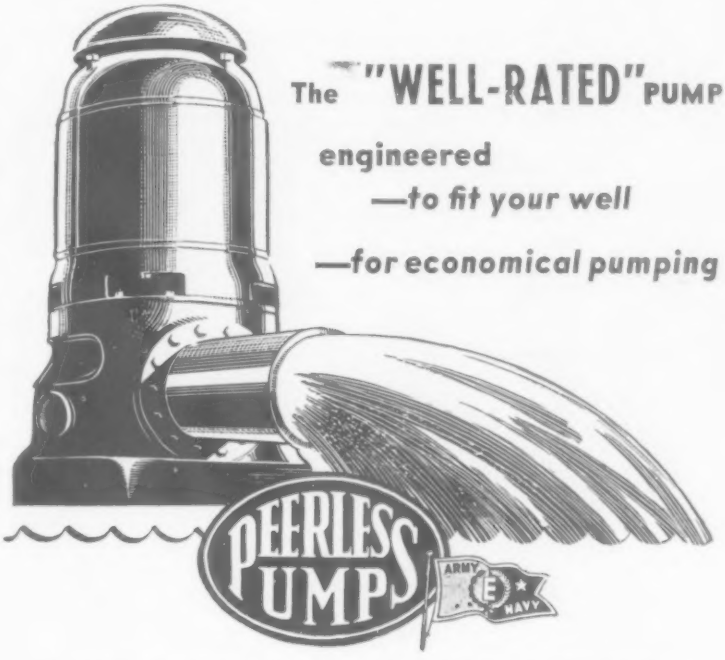
The following mimeographed publications, prepared at the request of California legislators, are available from the Bureau of Public Administration, University of California, Berkeley 4, Calif.:

STATE ORGANIZATION FOR FAIR EMPLOYMENT PRACTICES.—1945 Legislative Problems No. 1. By John F. Duffy, Jr. December 1944. 25 pp. 50 cents.

PROBLEMS OF THE VETERAN.—1945 Legislative Problems No. 2. By John F. Duffy, Jr., and Robert W. Binkley, Jr. December 1944. 45 pp. 50 cents.

FINANCIAL ASPECTS OF HEALTH INSURANCE.—1945 Legislative Problems No. 3. By Samuel C. May. March 1945. 50 cents.

THE ROLE OF THE STATES IN POST-WAR AVIATION.—1945 Legislative Problems No. 4. By Patricia L. Waterman, Feb. 1945. 58 pp.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## Survey of Parking in Downtown Los Angeles

DOWNTOWN LOS ANGELES PARKING STUDY.—*Downtown Business Men's Association of Los Angeles, 590 Subway Terminal Bldg., 417 S. Hill St., Los Angeles 13, Calif. January 1945. Illus. 23 pp.*

Report of the Parking Committee of the Los Angeles Downtown Business Men's Association, presented in the hope that the facts collected will lead to a solution of the automobile parking problem of the Los Angeles downtown area. This report, 18- x 12-inches in size, and illustrated with 13 plates, gives basic information furnished in part by the Regional Planning Commission of Los Angeles County, the City Planning Commission, and other organizations, as a basis for developing a general parking plan. Recommendations and estimates are made for the redistribution of parking facilities and the cost of operation, and possible solutions are offered.

## Laws Governing Substandard Buildings

DEMOLITION, VACATION OR REPAIR OF SUBSTANDARD BUILDINGS.—*By Charles S. Rhyne. Report No. 111. National Institute of Municipal Law Officers, 730 Jackson Place, N. W., Washington 6, D .C. 1945. 86 pp. $1.*

A legal aid in meeting the problems that will develop as building programs are resumed when material shortages caused by the war are ended and cities set out to eliminate unsafe and insanitary buildings. This report supersedes Reports No. 37 and 39 of the Institute, dated June and August, 1938, which are now out of print.

## Challenge to Racial Discrimination

RACE DISCRIMINATION AND THE LAW.—*By Carey McWilliams. Reprinted from Science & Society, Winter 1945 issue. National Federation for Constitutional Liberties, 205 East 42nd St., New York 17, N. Y. 24 pp. 10 cents.*

An eminent author and lawyer urges joint action by community leaders and lawyers to combat racial discrimination by instituting an intelligent and democratic program of legislation for the protection of the rights of minorities. Mr. McWilliams shows the necessity of approaching the problem of race relations as one which is of common concern to the entire community and of importance to the general welfare of the nation. Prejudice and discrimination are defined as separate and distinct elements in the picture. The author explodes theories that any action in this field will bring further chaos and points out that discrimination in all fields has been successfully challenged by legislation.

## Full Employment and the National Budget

NATIONAL BUDGETS FOR FULL EMPLOYMENT.—*Planning Pamphlets Nos. 43 and 44. National Planning Association, 800 21st St., Washington 6, D. C. April 1945. 96 pp. 50 cents.*

All Americans who will need and want jobs after the war can be employed at useful work, and at good wages, if the pre-war relationships between production, consumption, and savings change to fit the needs of a full employment economy, according to this NPA staff report. The most constructive way to effect this change, the report states, is to increase the buying power of individual consumers.

Full employment requires balancing the nation's budget, the total of everybody's incomes and expenditures—business, government, and individuals, the report points out. Allowing ample time for readjustment from war to peace, the report estimates that at full employment in 195x the national output must be about 40 percent higher than in 1941—the last peacetime year.

The report describes possible changes in pre-war relationships and incorporates these changes in three alternative budgets which would provide the necessary balance between production and expenditures at full employment levels. Supplemented by extensive tables and charts, this study presents a clear-cut financial picture, comparable to a businessman's operating income statement, of the balanced economy that could be attained were certain changes made.

## Other Reports Received

MEMPHIS, TENN.—*Civic Progress, 1940-44.* Annual Report of City Commission. 1945. 104 pp.

MINNEAPOLIS, MINN.—Financial Statistics for 1945. Issued by the Board of Estimate and Taxation, City Hall, Minneapolis, Minn. April 1945. 28 pp.

ROANOKE, VA.—Financial Report of the City Auditor for the Fiscal Year Ended December 31, 1944. February 1945. 64 pp.

WESTCHESTER COUNTY, N. Y.—Report of County Planning Commission, 1944. December 1944. 37 pp.

CAN GOVERNMENT GUARANTEE FULL EMPLOYMENT?—By Emerson P. Schmidt, Director, Economic Research Department. Post War Readjustments Bulletin No. 15. Chamber of Commerce of the United States, Washington 6, D. C. March 1945. 26 pp.

PREFABRICATED STRUCTURES, 1940-1944: A LIST OF REFERENCES.—Compiled by Edward S. Evans Transportation Research and U. S. Department of Agriculture Library. February 1945. Can be obtained from Edward S. Evans Transportation Research, 435 Woodward Bldg., Washington 5, D. C.

MILTON, MASS.—One Hundred Eighth Annual Report—1944. 337 pp.

SOCIAL SECURITY: PAST—PRESENT—FUTURE—?—*By Gerhard Hirschfeld. Published by The American Taxpayers Association, Inc., Munsey Building, Washington 4, D. C. 1944. 116 pp. $1.*

In this pamphlet Mr. Hirschfeld sets out to describe without going deeply into mathematical or actuarial considerations the difficulties he anticipates in the financing of compulsory unemployment compensation, health insurance, and old age and survivors insurance.

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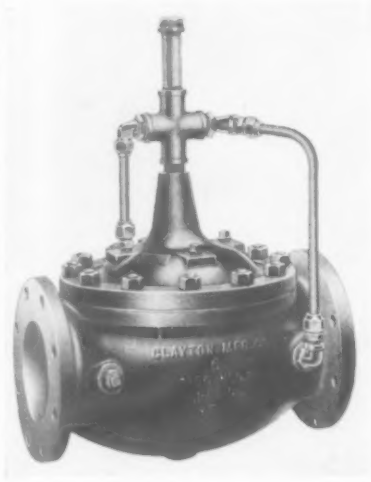
# News and Illustrations

**Items of Interest to City, Town and County Officials and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings**



*Clayton's new Hydromatic check valve is designed for controlled surge protection.*

## *New Check Valve Provides Surge Protection*

The new Hydromatic check valve manufactured by Clayton Manufacturing Co., Alhambra, Calif., is designed to fill the need for controlled surge protection.

This valve operates like a hydraulic door closer because of the restraining action which is presented at the nozzle. In closing, the final action is throttled, which effectively prevents surge. The opening operation is similarly controlled and throttled, so that pressures are equalized gradually, thus preventing shock and water hammer.

Pressure to open and close the valve is directed through the Surgemaster Control and adjustment is provided so that the speed of operation can be changed to meet various job conditions.

## *Aeroil Changes Name*

The adoption of the new name, Aeroil Products Company, by the former Aeroil Burner Company, West New York, N. J., manufacturers of oil-fired industrial equipment as well as gas-fired and electrically-heated equipment, was recently announced. In explanation of the change the organization said that the new name avoids the apparent contradiction in the word "burner" as applied to the many different types of electrical units now being produced.

Production will be continued on the famous line of HEET-MASTER kettles and No. 99 weed burners and maintenance torches which represent a major portion of the production output of the three Aeroil plants in New Jersey. At the same time added emphasis will be given to new types of equipment for which research and development is now under way. Some of this equipment has been outstandingly successful in fulfilling Army and Navy war requirements.

Aeroil maintains branch offices and warehouses in San Francisco, Chicago, and Dallas, and plans a reinstatement of their export business all over the world after final victory.

## *Pump Division Manager for Fairbanks-Morse*

John S. King has been appointed Manager of the Pump Division of Fairbanks, Morse & Co., 600 South Michigan Ave., Chicago 5, Ill., according to an announcement by R. H. Morse, Jr., Vice-President and Sales Manager.

*John S. King*

Mr. King started with the organization as a student in the Beloit, Wis., plant where he assembled and tested pumping equipment and diesel engines. In 1921 he was transferred to the Indianapolis works of the company building electric motors and generators. A year later he joined the sales force of the Chicago branch, working as territorial representative on pumping equipment until he was made Manager of the Pump Department of that branch in 1930. In 1937 he was appointed Manager of the firm's New Orleans branch, filling this position until his recent appointment.

## *C. H. Eastwood of Wallace & Tiernan Dies*

Charles H. Eastwood, General Advertising Manager of Wallace & Tiernan Co., Inc., Newark 1, N. J., died on April 27 in Pasadena, Calif.

Mr. Eastwood joined the Wallace & Tiernan organization in 1924, devoting his work to its flour milling activities. He subsequently became Manager of the district office at Jacksonville, Fla., and in 1929 was transferred to the head office in Belleville, N. J., working for a while on export sales before being assigned to responsibility for advertising and sales promotion, and then finally becoming General Advertising Manager. He had a large, nationwide acquaintance in all Wallace & Tiernan fields of interest.

He was a member of the American Water Works Association and the American Public Health Association for many years.

## *New System Produces Chemically Pure Water*

The Dorr Co., 570 Lexington Ave., New York, N. Y., has introduced a compact De-Ionization system which converts raw water into chemically pure water, meeting pre-determined specifications. The unit will deliver water that is the chemical equivalent of distilled water in purity, and its output can be regulated as to the exact degree of softness, purity, or mineral content required for a wide variety of specific water uses. Another advantage of the process is the use of a silica-free exchange material of high mechanical and chemical stability which makes possible long "runs" beween regeneration.

Its applications include the removal of simple hardness from water, reduction of bicarbonate alkalinity, reduction of total solids, and the recovery of valuable metals from waste water.

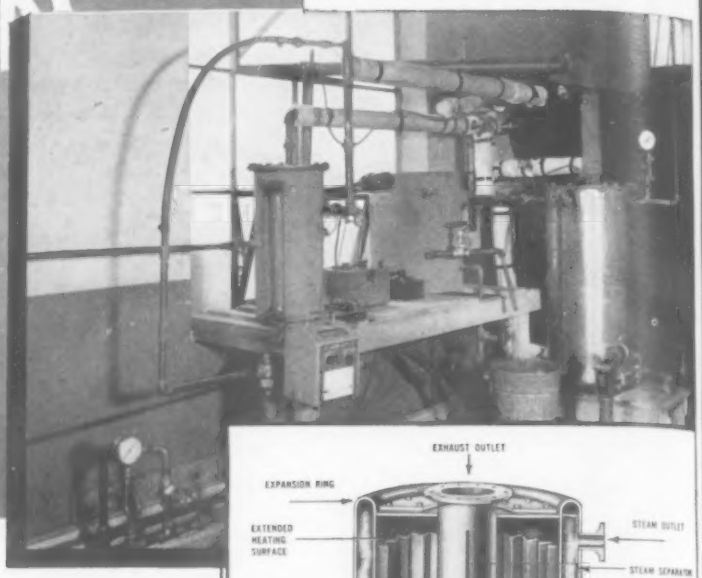
By means of simple controls, processing of the water takes place in two steps. In the first stage raw water passes over a bed of exchange material that removes calcium and magnesium constituents. Sodium and other metallic salts can also be removed at this stage, if desired. The exchange bed is regenerated with ordinary salt for the removal of calcium and magnesium; where total removal is necessary, acid is used as a regenerant.

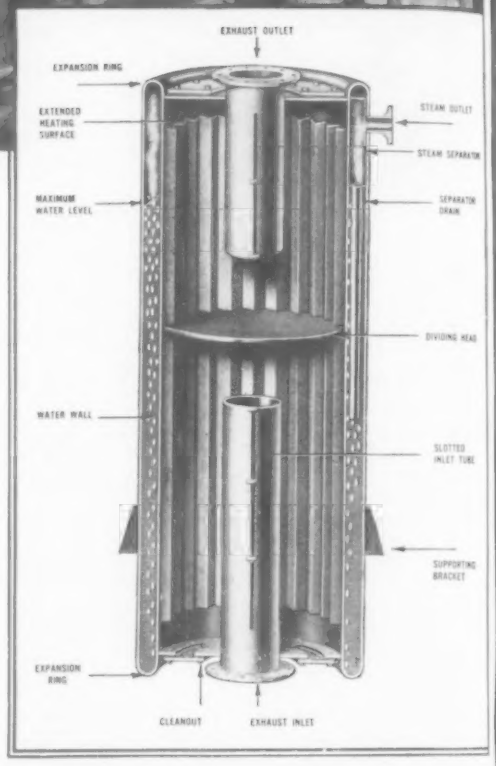
In either case, a second step follows, in which the anion exchanger absorbs the acid resulting from the initial step, producing the final product.

*This compact unit is the Dorr De-Ionization system which quickly converts raw water into chemically pure water.*

# PUT EXHAUST HEAT TO WORK

## WITH MAXIM HEAT RECOVERY SILENCERS





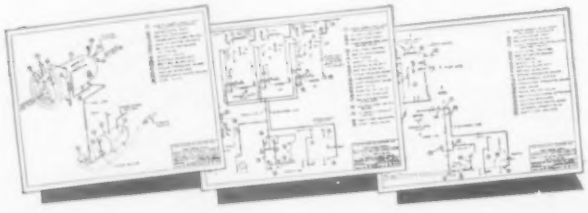

The illustration above shows a test hook-up for Heat Recovery Silencer research in the Maxim Research Department. Here again, as in Maxim Silencers, the basis for superior performance is constant and painstaking research which results in proper basic design and a never ending search for improvement.

Maxim Heat Recovery Silencers provide effective silencing of exhaust noise, 100% spark arresting (where this is desired) and the recovery of waste exhaust heat to produce steam or hot water for heating or processing operations.

These Heat Recovery Silencers are available with automatic controls which control steaming rate by varying water level in the water wall of the Silencer. They may be run wet or dry. Highly efficient heat transfer is assured by the Maxim extended heating surface feature.

●

For silencing without the heat recovery feature, Maxim makes silencers for internal combustion engine exhaust or intake, steam engine exhaust, air compressor intake, vacuum pump discharge, blower intake and discharge, high velocity steam, air or gas discharge. Engine exhaust silencers available with or without spark arrestor. Bulletins on request.



### PRACTICAL WORKING HOOK-UPS

Typical Heat Recovery Silencer hook-ups are available with a detailed discussion of each. We will be glad to send them to you. Just ask for Dwgs. B-298, B-301, B-302 and B-303.

**THE MAXIM SILENCER CO. • 66 HOMESTEAD AVE., HARTFORD, CONN.**

ARMY E NAVY

# MAXIM

*Presentation of the Martime "M" pennant, and victory fleet flag to the Chicago Pump Co.* LEFT TO RIGHT: *Joseph Huntowski, employee representative of the electricians union A.F.L.; L. R. Sanford, Sr.; William R. Crawford, regional advisor of Smaller War Plants Corporation; L. R. Sanford, Jr., Gulf-Great Lakes Regional Director of the U. S. Martime Commission; George D. Bers, President, Chicago Pump Co.; Milton Spiegel, Vice-President-General Manager; Mrs. Anna R. Weil, widow of the founder of the company, and Chairman of the Board; C. R. Fisher, Consulting Marine Engineer; and Frank Tylitzki, employee representative of the C.I.O. union. This award was made for the excellent performance of the company in supplying pumps and marine equipment for use on cargo vessels and troop ships.*

## *Maritime Award to Chicago Pump Company*

Chicago Pump Co., 2300 Wolfram St., Chicago, Ill., has been awarded the Maritime "M" by the U. S. Maritime Commission in recognition of its achievement in the engineering and production of marine pumping equipment, according to a recent announcement by G. D. Bers, President, and Milton Spiegel, Vice-President and General Manager of the company.

Presentation ceremonies were held at the company's main plant on April 21, with L. R. Sanford, Gulf-Great Lakes Regional Director of the U. S. Maritime Commission, presenting the "M" Merit pennant, the Victory Fleet Flag, and Merit Badges to the company and its employees.

The achievement of the company in supplying marine pumping equipment for the Maritime Commission is based on the engineering and production of Flush Kleen sewage pumping systems and centrifugal marine pumps and other equipment for use on various types of cargo vessels and troop ships.

## *Decals for Identifying Fire Extinguishers*

Walter Kidde & Co., Inc., 140 Cedar St., New York, N. Y., has introduced a set of three decalcomanias which will quickly identify first aid extinguishers. These are easily applied to the equipment and briefly and clearly specify the fires for which the particular unit is suitable.

These decals will help untrained or excited employees in an emergency, and prevent loss of time at the outbreak of a fire in selecting the right extinguisher. A limited number of sets will be supplied free of charge. Larger quantities may be had for a nominal charge.

## *Enterprise Engine & Foundry Elects Vice-President*

C. S. Herbert has been elected Executive Vice-President of the Enterprise Engine & Foundry Co., San Francisco, Calif., by the Board of Directors.

*C. S. Herbert*

In preparation for an aggressive role in the post-war era the company has vested Mr. Herbert with executive direction of the engine, process machinery and combustion equipment divisions of the company. Mr. Herbert, who joined the Enterprise a few years before the war, is also Secretary-Treasurer. In 1942 he was elected a director and a year later Vice-President.

He is a specialist in industrial management and was formerly manager of the special services division on the Pacific Coast for Ernst & Ernst.

The Board of Directors also elected the following officers: G. J. Panario, Chairman; C. P. Hoehn, President; H. C. McKenna, Controller & Assistant Secretary; R. E. Kroeck, Assistant Secretary.

**WATER MAIN DISINFECTION**

**We provide chemicals, equipment and experienced operator ready to serve you within 200 miles of Washington, D. C.**

***Write us for information***

**LUTHER and WOOD**

**310 Chandler Bldg., Wash. 5, D.C.**

**Phone NA. 5934-0906-1561**

**"Bob White"**

**ELECTRONIC BOX LOCATOR**

- Will locate curb and street boxes as fast as you can walk.
- Locates de-magnetized boxes where dipping needle fails.
- Finds boxes in the dark without a flashlight.

(Also Pipe Locators and Leak Detectors)

**S. F. FERGUSON**

**11 HILL STREET, NEWARK 2, N. J.**

# how to give water a BATH!

**SOLVAY**

**LIQUID CHLORINE**

Even sparkling, clean-looking water needs a thorough "going over" . . . for like a germ-infested jungle stream, it can be the carrier of deadly water-borne germs . . . It can tumble forth the wastes and impurities of industrial plants.

To make water **safe,** both on home and battle fronts, engineers rely on versatile Solvay Liquid Chlorine. This liquid effectively gives water a **bath** – "washing" out impurities, foul tastes and odors.

Today Solvay Liquid Chlorine is serving on the war front. Tomorrow it will serve municipalities and industry with newly discovered uses!

**SOLVAY SALES CORPORATION**

*Alkalies and Chemical Products Manufactured by The Solvay Process Company*

**40 RECTOR STREET NEW YORK 6, N. Y.**

## *Buenos Aires Uses LaPlant-Choate Bulldozer*

*In Buenos Aires, Argentina, a "Caterpillar" Diesel D7 tractor with a LaPlant-Choate bulldozer works on the Av. Nueve de Julio. In the background is the Ministry of Public Works Building.*

## *Consulting Engineer Appointed to Professional Engineers' Board*

John M. Rice, Century Bldg., Pittsburgh, Pa., consulting engineer, has been appointed a member of the Board for Registration of Professional Engineers in Pennsylvania, according to a recent announcement.

## *Carl Friden Dies*

Carl M. Friden, inventor and industrial organizer, and founder and President of the Friden Calculating Machine Co., Inc., San Leandro, Calif, died recently at the age of 54.

*Walter S. Johnson*

Born in Alvesta, Sweden, Mr. Friden arrived in San Francisco from Australia in 1917 and affiliated himself with the Marchant Calculating Machine Co., at Emeryville., starting as a draftsman in the experimental department. He remained with the company as Chief Engineer until 1929 and later acted as a consulting engineer until 1932.

In 1933 he invented and perfected the calculator designed to bear his name and his company was formed in December of that year. By June of 1934 the first Friden Calculator was placed on the market, and during the balance of that and the following year many mechanical improvements were incorporated into this calculating device. By 1937 Friden Calculators were distributed by a worldwide sales organization and the demand for them far exceeded the capacity of the new plant. By the fall of 1939 the improved Friden had created such a demand that an expansion program for increased production became necessary. From that time until the start of World War II the enlarging of floor space and production facilities never ceased. During 1941 the company concentrated on the development and production of war material for the Army, and has filled orders for millions of dollars.

The Vasa order of knighthood was conferred on Mr. Friden recently by the King of Sweden. This action closely followed the acceptance by the regents of the University of California of a chair in Scandinavian language and literature made possible through the aid of Carl M. Friden and other outstanding devotees of the Scandinavian language.

Directors of the company have announced the election of Walter S. Johnson as President to succeed Mr. Friden. Mr. Johnson has been a director of the company since its incorporation. He will be assisted in his new duties by an executive committee consisting of John M. Lund, Executive Vice-President and General Manager, and Charles T. Gruenhagen, Secretary of the board in addition to himself.

Mr. Johnson is also President of the American Box Corporation and a partner and President of Tartar, Webster & Johnson, lumber interests, and for many years had practiced law in San Francisco, after being graduated from the University of California.


A SYMBOL OF REAL FIRE PROTECTION

Extra large diameter hydrant barrels, grilled design of barrel, bonnet and nozzle caps, all add to the sturdy and rugged appearance of the Mueller-Columbian Fire Hydrant. But appearance is not all . . . the Self-Oiling Top, Safety-Flange and large Double Drain Valves are operating features that are truly symbolic of real Fire Protection.

MUELLER CO.
CHATTANOOGA, TENN.

PREVENT TANK RUSTING *Electrically*

Modern, service-proved Rusta Restor method . . . using safe, low voltages . . . gives lasting protection . . . for the cost of just one good paint job.

● Like hundreds of others from coast to coast, your tanks too can get lasting protection against rusting with Rusta Restor. Not a "magic" but the thoroughly proven cathodic (i.e. electrical) process, Rusta Restor maintains the tank in an "electro-negative" or "neutralized" state that *prevents* rusting. Modest in first cost . . . Uses the current of only one light bulb. Send for full details today.

RUSTA RESTOR
THE PROVEN CATHODIC (*i. e.* ELECTRICAL) RUST PREVENTIVE
A DIVISION OF
THE JOHNSTON AND JENNINGS COMPANY
861 ADDISON ROAD . . . CLEVELAND 14, OHIO

Send for Catalog

OCECO VAPOR CONSERVATION AND FIRE PREVENTION EQUIPMENT FOR VOLATILE LIQUID STORAGE TANKS . . . STOWE STOKERS . . . HAMMERED FORGINGS

# LET'S GET THE ADMIRAL HIS HORSE!

Official
U. S. Navy Photo

**Admiral Halsey** has his eye on a fine white horse called Shirayuki.

Some time ago, at a press conference, he expressed the hope that one day soon he could ride it.

The chap *now* in Shirayuki's saddle is Japan's Emperor—Hirohito.

He is the ruler of as arrogant, treacherous, and vicious a bunch of would-be despots as this earth has ever seen.

**The kind of arrogance shown by Tojo—who was going to dictate peace from the White House . . . remember?**

Well, it's high time we finished this whole business. High time we got the Emperor off his high horse, and gave Admiral Halsey his ride.

The best way for us at home to have a hand in this clean-up is to support the 7th War Loan.

It's the biggest loan yet. It's two loans in one. Last year, by this time, you had been asked twice to buy extra bonds.

Your personal quota is big—bigger than ever before. So big you may feel you can't afford it.

But we *can* afford it—if American sons, brothers, husbands can cheerfully afford to die.

*FIND YOUR QUOTA . . . AND MAKE IT!*

| IF YOUR AVERAGE WAGE PER MONTH IS: | YOUR PERSONAL WAR BOND QUOTA IS: (CASH VALUE) | MATURITY VALUE OF 7TH WAR LOAN BONDS BOUGHT |
|---|---|---|
| $250 | $187.50 | $250 |
| 225-250 | 150.00 | 200 |
| 210-225 | 131.25 | 175 |
| 200-210 | 112.50 | 150 |
| 180-200 | 93.75 | 125 |
| 140-180 | 75.00 | 100 |
| 100-140 | 37.50 | 50 |
| Under $100 | 18.75 | 25 |

# ALL OUT FOR THE MIGHTY 7th WAR LOAN

THE AMERICAN CITY

*This is an official U. S. Treasury advertisement—prepared under auspices of Treasury Department and War Advertising Council*

*The Kwik-Mix 6-S Dandie is a new one-bag concrete mixer.*

## *Kwik-Mix Announces New Concrete Mixer*

The Kwik-Mix Co., Port Washington, Wis., has just announced a new one-bag concrete mixer called the Kwik-Mix 6-S Dandie.

This light-weight mixer has a new selective skip shaker which does not act until the skip is partially emptied and ready for shaking. The re-mixing action, combining buckets and blades inside the drum, provides thorough mixing. The tilted flow-line discharge chute, an exclusive feature on the Dandie Mixers, is said to empty the drum faster because it reaches deeper into the drum.

The 6-S Dandie mixes 6 cubic feet of concrete plus 10 percent and complies with A.G.C. standards for this new size which replaces the 5-S and 7-S sizes. New models 16-S and 11-S are soon to follow.

## *Austin Company Establishes Aviation Division*

The Austin Co., Cleveland, Ohio, announced recently the establishment of a new Aviation Division with headquarters also in Cleveland.

*W. R. Engstrom*

The company is anticipating far-reaching municipal and governmental airline and airport development work in the immediate future. Before the war it designed and built airports and airport facilities in 62 cities of 28 states and provinces of the United States and Canada. During the war, it completed $50,000,000 worth of designing and building in this field, and constructed modification centers and hangars at Austin-designed aircraft plants costing several times that amount.

W. R. Engstrom, Vice-President, will head the new Division. He has been District Manager in the Pacific Northwest since 1933 and has been active in various phases of design and construction of aviation facilities for commercial airlines and municipalities for over 20 years.

"Expansion of our aviation industries and pilot training have set the stage for developments which are going to demand construction of airport facilities of all kinds in the immediate future," George A. Bryant, President of the company, said. "We are setting up this new division to handle the specialized needs of the airlines, municipalities, and governments, here and abroad."

## *Radiotelephone Equipment*

Radiotelephone equipment offered by the Kaar Equipment Co., Palo Alto, Calif., provides two-way voice communication for police, fire or highway maintenance departments of city, county or state.

Transmitters range from 15 to 250 watts for operating on the medium frequencies or in the 30-40 megacycle band.

## *Zeolite Co. Incorporates*

Culligan Zeolite Co., Northbrook, Ill., formerly a partnership, is now being conducted as a corporation, according to a recent announcement. Messrs. E. J. Culligan, Leo C. Culligan and John M. Culligan, former partners, are the sole owners.


SURFACE CONSOLIDATION
*Cuts*
ROAD MAINTENANCE COSTS

STATE ROAD #5 ... 9 MILES ... TRAFFIC 200 PER DAY

1939 Blading Cost Before Calcium Chloride $1,183.75 *vs* 1943 Blading Cost After Calcium Chloride $457.95

J. S. Schmit, Engineer of Stearns County, Minnesota tells in "Roads & Streets" how surface consolidation with calcium chloride reduced maintenance costs and improved more roads.

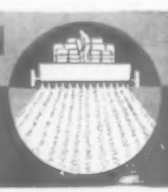
Briefly, at the start the blading cost was $32,598.76 for 750 miles. Three years later, with surface consolidation and calcium chloride 813 miles were bladed for $28,391.64 — 63 miles more road maintained for $4,207.12 less although blading crew hourly rates increased 25c per hour.

The great value in Mr. Schmit's work beyond the remarkable savings was the extended mileage of improved traffic service, which can be duplicated in your own community.

Write for literature on Surface Consolidation and Maintenance. Ask for Bulletin No. 29 which gives facts, figures and methods.

CALCIUM CHLORIDE ASSOCIATION, 4145 Penobscot Building, Detroit 26, Mich.

Dust is the cement in your gravel road
Save it with
CALCIUM CHLORIDE

# HOW A B-G BUCKET LOADER KEEPS YOUR TRUCKS *Rolling*

• Cut down their idle time. Keep trucks moving in rapid rotation with a fast feeding Barber-Greene Bucket Loader.

There is no cheaper way to load bulk materials . . . no better way to hold labor costs down.

No time lost getting into position. With its crawler mounting, you can get over soft spots, maneuver in cramped corners easily.

Cutting action across the full width of the feeding spirals keeps the buckets full. Material is delivered at top capacity from stockpiles, natural deposits and during light excavating, stripping, or shoulder shaping. You have twelve crowding speeds to cope with any loading condition.

There are a score of other advanced mechanical features in the B-G Bucket Loader that will help you save money on every material handling job. Write for free literature. Barber-Greene Company, Aurora, Illinois.

By Substituting a B-G Snow Loader boom, your Barber-Greene Bucket Loader can be used for street snow removal during winter months. Conversion is quick, easy, economical.

**Barber-Greene** B G *Constant Flow Equipment*

## *Stewart to Direct Texas Company Advertising*

Donald W. Stewart has been named Manager of the Advertising Division of The Texas Co., 135 E. 42nd St., New York 17, N.Y., according to a recent announcement by H. W. Dodge, Vice-President and General Sales Manager. He succeeds the late Stephen M. Birch.

*D. W. Stewart*

Mr. Stewart has been associated with the company since 1936; and for the past 4½ years was assistant to the Advertising Manager.

## *Opstad Sales Manager of Scotchlite Sales Forces*

Don O. Opstad was recently appointed Sales Manager of the Safety Division of the Scotchlite Department of Minnesota Mining & Manufacturing Co., St. Paul 6, Minn.

Mr. Opstad will be located at the New York office of the company at 155 Sixth Avenue for the time being, but will transfer to the general office at St. Paul later in the year.

## *Wallace & Tiernan Group Christens Ambulance Plane*

Four members of the Labor-Management Committee of Wallace & Tiernan Co., Belleville, N. J., recently went to Oklahoma City, Okla., where, at the plant of the Douglas Aircraft Company, they christened a hospital ambulance plane and five ambulances that were purchased through the sale of war bonds to employees of Wallace & Tiernan in the Sixth War Loan Drive.

Wallace & Tiernan are manufacturers of such life-saving equipment as water purification units of all types, pharmaceuticals, special flashing and signalling devices, which have been supplied in large quantities to the armed forces throughout the world. It was because of their value in saving lives that the hospital ambulance plane and five ambulances were purchased. It is of interest to note that the ambulance plane is equipped with a W&T flasher unit.

The Douglas Aircraft Company requested that the committee christen the plane so that the ceremony would coincide with the opening of the Seventh War Loan Drive in its plant.


DOW

chemicals available for prompt delivery

Trichlorbenzene

Trichlorbenzene can show a long record of service to industry. As a low-cost, low-fire-hazard solvent . . . as an intermediate . . . as an insect-control agent . . . its usefulness is well established.

It is widely employed for dissolving oil-soluble dyes, as an addition agent for lubricating oils, as an intermediate in dye manufacture, and for many other purposes. Trichlorbenzene even finds considerable use in the treatment of wood for termite control.

Dow is ready to make shipment of Trichlorbenzene in 5, 10, and 55 gallon drums and in tank car lots. Your inquiries will be handled promptly.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN



ROSS
Automatic
Valves

*No distribution system is better than the valves that control it—*

ALTITUDE VALVES
for
Control of elevation and heads into and out of tanks, basins and reservoirs.
1. Single acting.
2. Double acting.
3. Combination assembly for three or more automatic operations.

COMBINATION VALVE
Combination automatic control both directions through the valve.
A self-contained unit, with three or more automatic controls.

REMOTE CONTROL VALVE
Electric remote control—solenoid or motor can be furnished.
Adapted for use as primary or secondary control on any of the hydraulically controlled or operated valves.

*Write today for catalogs and details to fit your particular system.*

ROSS VALVE MFG. CO.
INCORPORATED
P. O. BOX 596, TROY, N. Y.

EVERY PART OF THE

# KARPARK

EXPLAINS ITS LONG, STEADY PERFORMANCE

• To be effective; to win public favor; to be profitable, a parking meter must have accuracy, long life and require little servicing. That's why there are no "short-cuts" in the making of a Karpark. All of its parts show the fine craftsmanship that combines durable strength with precision. From machine cut and polished shafts, pinions and gears to the mainspring of finest steel, every part looks well made—it is well made. Write for the facts. Know why Karpark is the wise choice.

**KARPARK** *Automatics*

KARPARK CORPORATION

CINCINNATI 6, OHIO

KARPARKS ARE MANUFACTURED BY THE HERSCHEDE HALL CLOCK CO.

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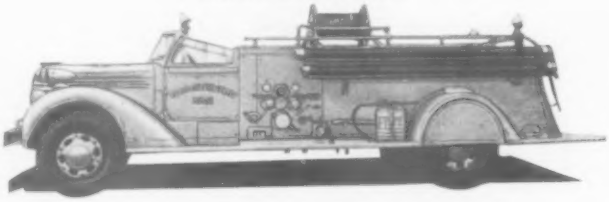
TANKERS **CUSTOM-BUILT** PUMPERS

FIRE



TRUCKS

*Write for Catalog*

## OREN FIRE APPARATUS CO.

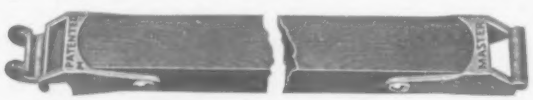
ROANOKE, VA.

---

## SURE GRIP SEWER RODS and ACCESSORIES

The REGULAR, a light rod,
Fir stock 1¼ x 1¼ inch square.

are joined together with a dual lock forming a rigid chain that will float. They can be coupled or uncoupled upon the street if desired. Made in two sizes.




The MASTER, a heavy duty rod,
Fir stock 1½ x 1½ inch square.

*Write for catalog on complete line of sewer cleaning equipment.*

**EXPANDING SEWER MACHINE CO.**

NAPPANEE, IND.

*Standard's two-way power driven tow broom.*

## *Two-Way Power Broom*

Standard Steel Corp., 5001 S. Boyle Ave., Los Angeles 11, Calif., has issued a new bulletin (No. S5) on its 2-way power driven tow broom. The power drive of this broom assures uniformly clean sweeping of surfaces regardless of traction speed.

The bulletin points out the many new and exclusive features incorporated in the broom, such as the fact that the rotation of the broom can be reversed, permitting two-way sweeping in narrow places especially on long narrow strips of pavement where turning is difficult; the fact that the broom is fitted with dual self-locking tongues at each end for towing in either direction by truck; that both axles are adjustable to any desired angle to eliminate side slipping of wheels; that broom is held to the surface on uneven pavement by a retainer spring; and the fact that an all-welded one-piece tubular frame reduces its weight and provides maximum structural strength.

An all-steel broom case helps eliminate skipping and promotes faster broom revolutions per minute as well as faster traveling speed. A spring balance permits fingertip control when raising or lowering the unit. When using the broom, uniform leveling of top coat aggregates is insured by its ample wheel base.

## *Davey Compressor Announces Personnel Changes*

Several executive changes in the Davey Compressor Co., Kent, Ohio, and the appointment of new domestic dealers have been announced by Paul H. Davey, President.

Karl Cooke, Secretary of the company for the past 15 years, has resigned. R. K. Evans, Office Manager for many years, succeeds Mr. Cooke as Secretary and active head of the Accounting Department.

Acme Contractors Machinery and Equipment Co., Inc., 4221 W. Harrison St., Chicago, Ill., was recently appointed to provide additional Davey sales and service facilities in the Chicago area. They will handle Davey's complete line.

Garson Iron and Steel Company, 512 Lyceum Bldg., Duluth 2, Minn., has been appointed to handle the complete line of stationary and portable compressors, heavy-duty truck power take-offs and pneumatic saws for the area surrounding Duluth. A branch office is maintained at Norfolk, Va.


# *Planning* a playground, school, waterworks?

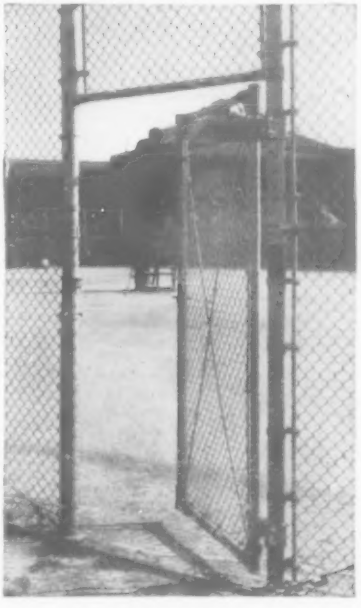
## *- don't forget* FENCE!

WHATEVER your project, it will pay to include fence in the original plans. By doing so you make sure of proper protection and avoid the danger of marring the project's appearance by adding fence at a later date.

Strong, sturdy fence is of vital importance in making such projects function properly. Playgrounds and school yards need fence to safeguard children. Stadiums, pools and parks need fence to control crowds and admissions. Water Works and Power Plants need fence to keep out troublemakers.

We suggest you specify U·S·S Cyclone Fence to assure "tops in protection." Cyclone is the world's most widely used property protection fence.

Ask our engineers to help you with your plan and make recommendations. You'll be under no obligation.



**SEND FOR FREE 32-PAGE BOOK**

Mail the coupon at once for our 32-page book on Cyclone Fence. It is crammed full of pictures and facts about fence that will help you choose the right type for your property. Many kinds of fence are pictured and described. This book is free for the asking. And write us about your future fence requirements. We'll be glad to make recommendations and give you an estimate.

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UNITED STATES STEEL

**SWIMMING POOLS *NEED* PROTECTION, too**

Some Stewart products are available now for certain protective purposes, and you may qualify. Tell us what you need in iron or wire and we'll be glad to send complete details. When restrictions are lifted all Stewart Iron, Wire and Bronze products will again be manufactured. The Stewart Iron Works Co., Inc., 1221 Stewart Block, Cincinnati 1, Ohio.

**Stewart IRON and WIRE FENCES**

## STEAM PUMPING ENGINES

1—**Snow** 8 mgd. C&FW Cross Compound Opposed type condenser; size 26"x54"x17x36, with waterworks type condenser.

1—**Snow** 6 mgd. C&FW Cross Compound Opposed type condenser; 20-40x14¾x36, with waterworks type condenser.

1—**Allis-Chalmers** 4 mgd. Cross Compound condenser. Size 12x28x13x24. All fine condition.

1—**Platt Iron Works** Cross Compound C&FW Meyer Valve Gear Condenser. 1000 PGM. Size 14x28x9¼x18.

## PUMP VALVES

**Birch** Valves for all types of reciprocating pumps.

## LARGE GATE VALVES

1—20" **Rensselaer** #13 iron body bronze mounted hub end gate valve with 16" iron brass lined hydraulic cylinder with indicating rod and eyebolt, 100#.

**BIRCH MANUFACTURING COMPANY**

**1523 Sedgwick St.** **Chicago 10, Illinois**

## LINES WANTED

Engineering Sales Organization now handling specialized water works equipment wants additional lines of supplies and equipment. This Company has engineers and service men and a first class working organization in Kentucky, Tennessee, Mississippi, Arkansas, Alabama and West Florida. Over twenty years' experience and thousands of municipal and industrial customers. Recently acquired properties provide facilities for expansion including offices, display rooms and warehouses. Want connections with manufacturers having high grade and specialized supplies and equipment for distribution in any part or all of the territory.

Address Box 254, The American City
470 Fourth Avenue New York 16, N. Y.

## BRONZE MEMORIALS AND HONOR ROLL TABLETS OF EVERLASTING BEAUTY AND DIGNITY

Consider carefully the manner in which you perpetuate the memories of those who served and sacrificed. Truly fitting memorials and honor roll tablets cannot be produced at this time while bronze must be devoted entirely to war uses. When the Government releases this enduring metal, we shall be ready with a complete new series of designs that will be worthy of association with such General Bronze achievements in casting as the famous statues at Rockefeller Center and the beautiful bronze Baldachino in St. Patrick's Cathedral. These new memorials and honor rolls will reflect our thirty-five years' experience in fine bronze work. Send for our interesting and helpful brochure.

**GENERAL BRONZE CORPORATION**
34-44 TENTH STREET LONG ISLAND CITY 1, N.Y.

## The EDDY Hydrant

Eddy Fire Hydrants have many points that appeal to water-works men. For example:

A damaged valve can be replaced in a few minutes at slight expense.

Should the standpipe be broken, not a drop of water need be lost.

All hydrants are frost-proof.

These and many other points of excellence are thoroughly explained in our catalog, which it will pay you to study.

***Also manufacturers of the well - known Eddy Valves***

**EDDY VALVE COMPANY**
**WATERFORD** **NEW YORK**

*Representatives*
**Jas. B. Clow & Sons, Chicago, Ill.**
**National Cast Iron Pipe Co., Birmingham, Ala.**

## *Shockproof Runway Markers by Westinghouse*

*Shockproof airport runway markers tough enough to withstand the blow of a fully loaded B-29 taxiing over them, are being made at the Lighting Division of the Westinghouse Corp., Cleveland, Ohio. Miss Eleanor Tighe is shown as she moves a line of the runway markers at the plant. The markers, used to outline the exact location of runways, are an example of the many lighting fixtures made at the plant for the armed services.*

## *Improved Product Result of Wartime Demands*

Pennsylvania Salt Manufacturing Co., 1000 Widener Bldg., Philadelphia 7, Pa., announces the introduction of its Quaker improved chlorinated lime which was developed to fill wartime demands. New methods of manufacturing and improved methods of controlling the manufacture of chlorinated lime have resulted in the material having better stability characteristics, more uniformity, and a lower moisture content. Improved stability assures users of more consistent results.

While developed as a war product and still in considerable demand for military uses, Quaker improved chlorinated lime is also available for civilian use. Information may be secured by writing the company.

## *Chlorine Residual Testing Equipment*

LaMotte Chemical Products Co., Towson 4, Baltimore, Md., has recently developed a new series of comparators in which are incorporated all the recent improvements of the Ortho Tolidine method.

Literature describing this new series of LaMotte chlorine standards may be had by writing to the company. They also will send you on request a copy of "A B C of pH Control."

## *Marmon-Herrington Man Chairman of Automotive Engineers*

Robert C. Wallace, Vice-President and Director of the Marmon-Herrington Co., Indianapolis 7, Ind., and Director of Engineering for the company, has just been elected Chairman of the Indiana Section of The Society of Automotive Engineers, to serve for the year beginning June 1st of this year.

Mr. Wallace has had a long career in the field of automotive engineering, and made many important contributions to the war effort. During this period he has been in charge of the engineering department of the company which has produced thousands of combat tanks, armored vehicles, and All-Wheel-Drive trucks for our own forces and those of our Allies.

Mr. Wallace became associated with the Stutz Motor Company in 1927. He was first employed by Marmon-Herrington in 1932 as Service Manager, and has been with the company ever since.

The Indiana Section of the Society of Automotive Engineers is a member body of the national organization which includes many of the top ranking automotive engineers of the country.

Other officers elected for the 1945-46 year are: Karl H. Effman, Vice-Chairman; A. W. Putnam, Treasurer; and Harlow Hyde, Secretary.


**Police-Traffic Street-Highway and Maintenance Departments**

*FUNCTION BETTER AND MORE SAFELY EQUIPPED WITH*

**Big Beam**

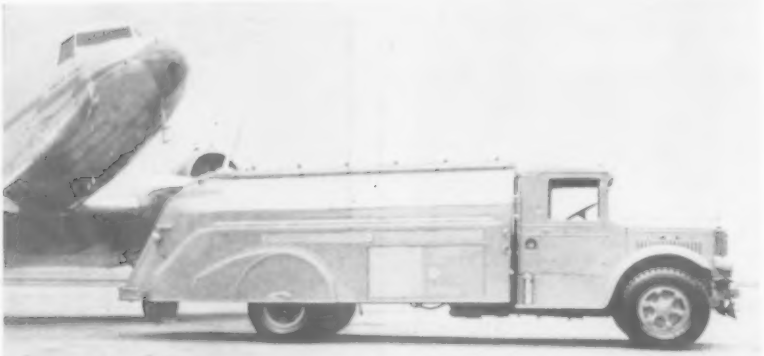
**PORTABLE ELECTRIC HAND SEARCHLIGHTS**

Invaluable for signals at highway accidents, wrecks, spotting auto licenses, illuminating hazardous approaches for night work, emergency work, maintenance work on cars, trucks, busses. Big Beam carries light where you need it . . . when you need it. Portable, handy to use . . . inexpensive, yet sturdy and long-lived. Big Beam is indispensable to Police, Highway and Maintenance Departments in any emergency, and to Fire Departments in penetrating smoke and other hazards. Throws beam 2500 feet and more and, by use of snap-on lens, gives the same volume of light over a wide area. Storage battery or dry-cell models available.

Write today for catalog and full description of Big Beam Portable Electric Hand Searchlight.

**U-C LITE Mfg. Co.**

Dept. B • 11 E. Hubbard St. • Chicago 11, Ill.



# HEIL REFUELERS

**are designed to give your airports**

## *More Flexibility*

**to keep pace with changing requirements**

Heil "Trailerized" (frameless) Tanks have been built in capacities to 6000 gallons for a single unit and 10,000 gallons in trains. This big capacity enables you to refuel many planes in short order — because it is estimated that post-war planes will only require from 822 to 1700 gallons per plane.

In addition you get *low capital investment* because Heil Refuelers cost far less than adequate pit installations — and you get *low operating cost* to keep budgets well under control. Write and have us put your name on the mailing list to receive news of present and future developments.

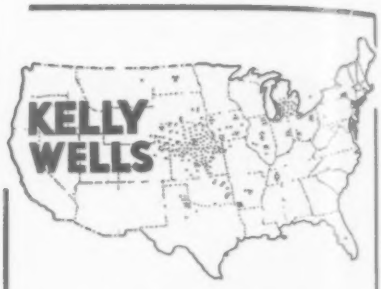
ARMY NAVY

**THE HEIL CO.**

GENERAL OFFICES • MILWAUKEE 1, WISCONSIN

T-150A

This production line for Heil Refuelers is operating at "peak" capacity, to maintain Heil's record as one of the world's largest producers of this type of equipment.




## ALL OVER THE MAP!

For 25 years Kelly concrete cased wells have stood the test of time. We have several thousand now in service, covering a territory of 33 states and parts of Canada.

Kelly concrete cased wells are especially adapted for developing large water supplies from sand and gravel formations.

We Guarantee our wells to develop all available water, sand free, to their full capacity.

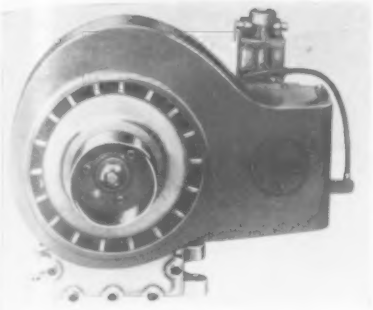
**KELLY WELL CO., INC.**
**Grand Island, Neb.**

## CITY MANAGER WANTED

The city of Ketchikan, Alaska (population 6,500) owning and operating electric power, water and telephone systems is looking for a MANAGER. The Manager reports to a board of control of five members and has under him superintendents of the power, water, telephone and accounting systems, all well qualified men. The city's credit rating is A-1, and is selling bonds for the construction of an additional hydro unit. Applicants should mention age, qualifications, family connections and salary expected.

Address:

B. M. Maulding,
Member of the Ketchikan Public Utilities Board,
Ketchikan, Alaska.



*The "Busy-Bee" is Kinner's new air-cooled, 4-cycle, 5hp engine.*

## *Kinner Motors Introduces 5-hp Engine*

Kinner Motors, Inc., Glendale, Calif., has announced an all-purpose air-cooled compact engine designed for universal application and built for service embodying principles which are new in small engine design and manufacturing.

Called the "Busy Bee," this Model AB-5 is an air-cooled, 4-cycle, L-head engine rated 5 hp., at 2600 rpm, but develops 6 hp at 3250 rpm. The single cylinder is horizontal and detachable, making maintenance easier. Bore is 2¾ inches, stroke 3 inches, displacement 17.8 cubic inches. The whole unit requires only 2.4 cubic feet of space.

The use of aluminum alloy in crankcase, piston, head, and crankcase and rear cover makes this engine the lightest engine on the market in its horsepower class. The power take-off shaft is 1 inch in diameter and rotates counter-clockwise facing the shaft.

## *Foxboro Adds to Engineering Staff*

Clifford E. Alden has joined the staff of The Foxboro Co., Foxboro, Mass., and will make his headquarters at the home office. He has had wide experience in the municipal engineering field, and will specialize in the instrumentation of water works, sewage disposal plants, garbage incinerators, and similar public works, and similar equipment and facilities operated as parts of industrial plants.

*Clifford E. Alden*

During his twenty years of sales and engineering experience, Mr. Alden has been associated with prominent companies supplying equipment for public works plants. In 1942 he accepted a position with the War Manpower Commission, and was connected with the Training Within Industry program in the area served by the Philadelphia Regional Office. He resigned this post to take up his present duties with The Foxboro Co.

## *Water Softening Equipment*

To supply water softening equipment to fill your needs the Elgin Softener Corp., Elgin, Ill., offers a complete line of Zeolite water softeners including the Double-Check type which provides up to 44 percent more capacity.

Increased capacity and efficiency in this unit is due to a different type of water distributing and collecting manifold system equipped with double check valves and strainer nozzles which permit the use of a far deeper bed of zeolite without zeolite loss. The new operating principle of this type softener also provides more effective backwashing, more efficient regeneration and a new self-cleaning action.

Other Elgin softeners include the Elgin Downflow softener in which the water enters the top of the tank through a special manifold which insures even distribution over the zeolite bed; and the Elgin Upflow softeners in which a constant flow can be maintained at a rate sufficiently high to keep the zeolite in a state of semi-suspension.

The selection of the proper type equipment for your needs can be definitely determined by a careful study of your requirements. Elgin engineers are ready to help you find the unit which will best fit your needs. A descriptive bulletin may be had by writing the company.


*Stop Your Leaks • Save Water and Steam*

**The Ear That Locates Underground Leaks**

**GLOBE GEOPHONE**

**Locates leaks in water, air, and steam pipes quickly and accurately.**

*SEND FOR FOLDER AND MORE DATA*

Many times the Geophone on one leak alone saves more than the cost of the instrument. Successfully used for 25 years by many Water Systems, Industrial Plants, and U. S. Government Plants.

No water system, industrial plant, institution having underground piping, water, air, or steam, can afford to be without a Globe Geophone in their Maintenance Department. One Water Service Company has over 35 Globe Geophones in use in their various systems. The Globe Geophone is a time and money saver. It conserves water and steam.

**Price Complete with Leather Covered Carrying Case and Shoulder Strap ..... $75.00**

*For descriptive folder and more detailed data write:*

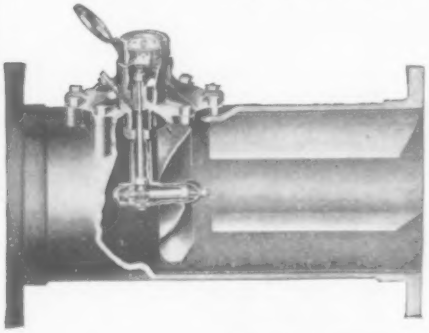
**GLOBE PHONE MFG. CORP.**
**Department H, Reading, Mass.**



**SPARLING METERS**

**for YOUR Main Lines**

**Tube Meters—2-inch and over**
**Saddle Mounted—6 to 72-inch**
**Compound Meters—up to 36"-10"**



WIDE-SPREAD use of Sparling Meters since 1919 has proven their dependability for Consistent Accuracy and Long Service.

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NOTE the *direct action* from flowing water to Totalizer in meterhead. Flow-rate Indicators, Recorders and Controls are optional.

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***Bulletin 308 comes on request***

**R. W. SPARLING** *Manufacturer of Water Measuring Equipment*

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CHICAGO 16.....3104 South Michigan Ave. — 101 Park Avenue ..... NEW YORK 17
BOSTON 8.....6 Beacon Street

# MODERN VALVES

FOR *MODERN* EQUIPMENT

*by* **CLAYTON**

The Clayton "Feather-Touch" Pilot and the Clayton Remote Control Valve are the *modern* combination for all types of installations and equipment where valves must be opened and closed automatically or manually by remote control.

**MANUAL OPERATION**

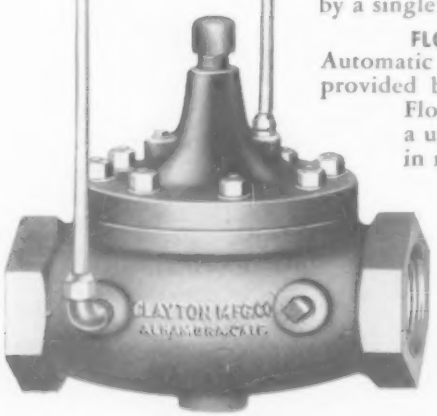
A single Clayton "Feather-Touch" Pilot opens and closes single valves... or groups of valves...individually or simultaneously. The touch of a finger on the Selector Pointer of the Dial does the job...with any line pressure to 300 P.S.I.

**SOLENOID OPERATION**

Automatic electrical control is provided by means of the Clayton Solenoid Pilot. Single valves...or groups of valves...can be operated by a single Clayton Solenoid Pilot.

**FLOAT MECHANISMS**

Automatic Liquid Level Control is provided by means of the Clayton Float Mechanism...either as a unit with Clayton Valves or in remote installations in connection with any kind of tank or sump. Clayton Float Control Equipment is also available for valve operation on Separator Units handling liquids of varying specific gravity.




*Write for Engineering Data • Representatives in Principal Cities*

**VALVE DIVISION**

**CLAYTON**

*"Feather Touch" CONTROL*

CLAYTON MANUFACTURING COMPANY, ALHAMBRA, CALIFORNIA

# STREET-NAME SIGNS

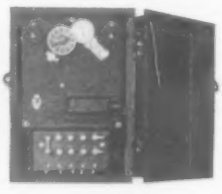
*Now Available!*

Attractive, permanent, rust-proof, metal Street-Name Signs by Cataphote are now available! Outstanding in appearance and legibility. Also—order all types of metal traffic signs with Cataphote Reflector Buttons for day-and-night visibility. Used coast to coast for safer higways.

**CATAPHOTE CORPORATION**
**Toledo, Ohio**

# TRAFFIC CONTROLS

**Designed and Manufactured to Standard or Individual Specifications**



TYPE 99A

Standard 6-circuit synchronous heavy-duty traffic-signal control.

**SOUTHERN SWITCH AND SIGNAL COMPANY**

**Shreveport, La.**

## *Milford Rogers Joins Builders-Providence*

Milford E. Rogers is now associated with Builders-Providence, Inc., Divisions of Builders Iron Foundry, Providence, R. I. He was recently engineer and superintendent of the Wichita, Kan., water system, and later Acting Director of Service, responsible for streets, sewage disposal, water supply, and related functions at Wichita.

*Milford E. Rogers*

In his new position as Project Engineer, Mr. Rogers will be concerned with a combination of sales and service relating to the company's speciality in the design and manufacture of flow metering, flow control, and related equipment for water and sewage works.

Before entering the municipal field in 1937, Mr. Rogers was connected with the Santa Fe Railway Co. in various capacities on design, maintenance, and construction.

## *Dr. Homer G. Turner Dies in Erie, Pa.*

Dr. Homer G. Turner of State College, Pa., died recently in Erie, Pa.

Dr. Turner was consulting engineer for the Anthracite Equipment Corp., 101 Park Ave., New York, N. Y. He joined the organization in 1936 and since then has played an important part in the development and promotion of Anthrafilt.

## *Reluctance to Specify Patented Products Criticized by Armco Products*

The reticence of the engineer and the public official in specifying patented processes and products came in for criticism by the Armco Drainage Products Association, Middletown, Ohio, in a strongly worded editorial which appeared recently in this company's journal, *The Highway Magazine*.

The company expressed the opinion that at least two reasons suggest themselves for this reluctance to specify patented products. The first is the reluctance to deviate from "standards," and the second is a misconception of professional ethics. The first, the company feels, is not valid, since penalizing the patented product will naturally discourage the development of improvement in equipment, processes, and products. Professional ethics, the company further argues, need not be endangered as long as the engineer does not personally profit by the manufacture or sale of the product.


# Over 90 years

## OF PROGRESSIVE STORAGE TANK ENGINEERING!

Established in 1854, the R. D. Cole Mfg. Co. has long been recognized as one of the nation's outstanding tank builders. With over 90 years of progressive storage tank experience at your disposal, we shall welcome the opportunity to serve your tank needs.

1,000,000-Gallon "Cole-Shallow Depth" Tank

### ALL SHAPES AND SIZES

The R. D. Cole Mfg. Co. has developed a complete line of elevated steel tanks for water supply, both for domestic service, and sprinkler requirements, ranging in capacity from 5,000 to 2,000,000 gallons. The designs include the standard Hemispherical and Self-supporting bottom, the "Cole Ovaloid," Standpipe, and many individual styles involving architectural treatment to satisfy local conditions, or to provide special shapes for advertising purposes.

### STORAGE TANKS

Pressure tanks for storage of gas from digestors at sewage disposal plants so that excess output at peak load can be used during off-peak periods. Chemical storage tanks, hot water storage tanks, tanks for bulk storage of oils and gas.

### CONSTRUCTION FACILITIES

Fabricated steel plate — the R. D. Cole Mfg. Co. has a fully equipped plant for the fabrication of riveted or welded steel plate. In addition to the construction of its regular line of horizontal return tubular boilers, oil storage tanks, tubular heaters, etc., the company is prepared to construct special tanks and apparatus of any specified metal plate.

***Designs available for any service, made to your specifications or from our designs submitted by our own Engineering Department.***

**R. D. COLE MFG. CO.**

*Established 1854*

NEWNAN, GEORGIA

# CONCRETE *the low annual cost pavement*

Davison Limited Access Highway, Detroit. *10-in. uniform cross section.*

Residence street in Saginaw, Michigan. *7½-5-7½ in. cross section.*

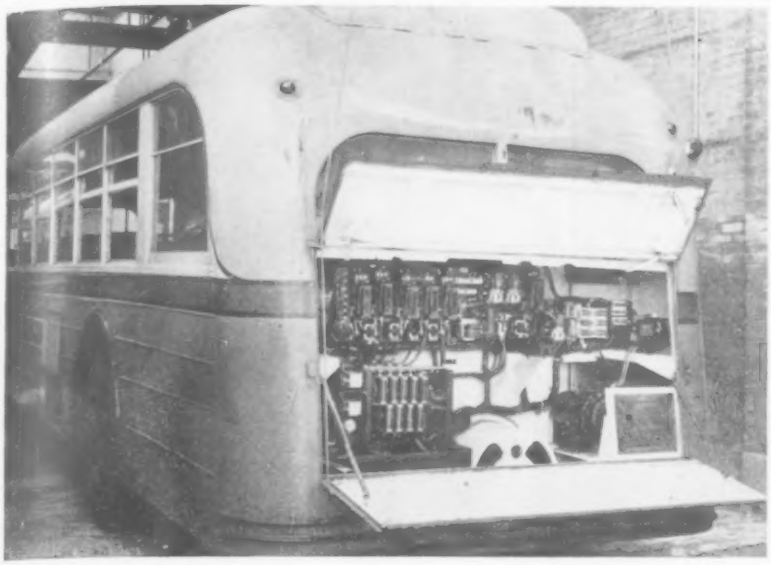
State highway in Oklahoma carrying moderately heavy rural traffic. *9-6-9 in. cross section.*

Accurate formulas enable engineers to design portland cement concrete pavements to carry any predicted volume and weight of traffic at lowest maintenance expense. This plus the fact that concrete, for all but the lightest traffic roads, usually costs less to build than any other pavement of equal load-carrying capacity, means low annual cost, the true measure of pavement economy.

## PORTLAND CEMENT ASSOCIATION

**Dept. A6-4, 33 W. Grand Ave., Chicago 10, Ill.**

A national organization to improve and extend the uses of concrete . . . through scientific research and engineering field work



*A new motor ventilating system that saves fuel, lengthens insulation life, and gives better coach heating in winter, as well as controls that are electrically operated, are now part of the Westinghouse trolley coach.*

## *Improvements for Control and Drive of Trolley Coaches*

Several new improvements for the control and drive of trolley coaches have been introduced recently. A new control, developed by the Westinghouse Electric and Manufacturing Co., East Pittsburgh, Pa., will aid in giving better performance.

Heretofore, the operators, in the front of the vehicle, controlled the master switch, accelerator, and reverser, situated in the back of the coach, by three long mechanical linkages, which are subject to wear and possible mis-operation. The controls are all operated electrically now. All 12-volt instead of 00-volt control circuits are used. Cam switches replace interlocked sequence switches. Dynamic braking has been extended down to about 2 miles per hour from about four, with consequent less wear of the mechanical brakes.

The new trolley-coach motor has no fan of its own. The separate motor-driven fan used to ventilate the resistors and control has been made a little bigger, from 1½ to 2hp. It blows a draft of air first through the motor, then across the resistors, and in winter into the coach for heating. Previously the motor heat was thrown away. As a result of this change, power is saved, the coach is uniformly heated, and the motor runs cooler.

## *Hewitt Rubber Corp. Makes Appointments*

Joseph H. Hayden has been promoted to the position of Vice-President of the Hewitt Rubber Corp., Buffalo, N. Y., and William H. Watkins has been named Controller and Assistant Treasurer, according to a recent announcement.

Mr. Hayden has been associated with Hewitt for 27 years. He is a member of the industry's committee to both the WPB and OPA.

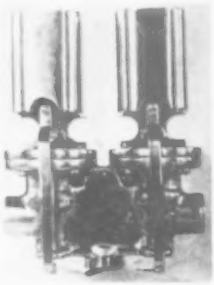
He joined Hewitt immediately after service in the first World War. In 1925 he became manager of the New York office, later returned to the Buffalo headquarters, and was named Secretary in 1936. In assuming his new position of Vice-President, he retains the title and duties of Secretary.

Mr. Watkins has had 20 years of service with the company. He has served as a cost specialist and engaged in market research and analysis. Until his recent promotion he was head of the Accounting Department.

## *Industrial Survey for Terre Haute*

The Douglas T. Sterling Co., 500 Fifth Ave., New York 18, N. Y., management engineers, have just completed an industrial survey for the city of Terre Haute, Ind., to form the basis for an intelligent approach to city planning problems. The report, with recommendations for civic improvements resulting from an analysis of the survey, was made public at a banquet meeting recently sponsored by the Terre Haute Industrial Committee.

This committee, representing both management and labor and operating with community-subscribed funds, is starting a program of civic improvement, first, to make the community more attractive to industry, and second, to attract industry to the community. Problems to be attacked include housing, traffic, flood control, smoke abatement, and the establishment of a Union Station. A program to acquaint outside industry with the advantages of a Terre Haute location started May 15, employing the use of national advertising, publicity, direct mail, and personal contact.

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Remote Control or Automatic Operation

Air or Water

Handle All Operating Jobs

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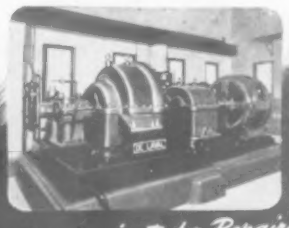
Benton Harbor Michigan

SEVENTEEN YEARS OF UNINTERRUPTED SERVICE



...not one minute for Repairs!

Since September, 1927 when this De Laval motor-driven geared compressor was placed in service in the City of Houston Sewage Treatment Plant, it has operated better than 99 per cent of the time, without ever requiring repairs or overhauling.

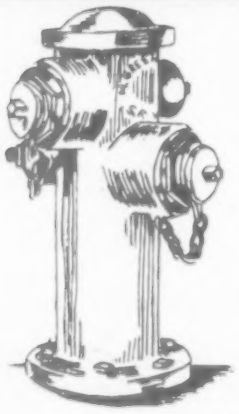
Such operation is typical of De Laval dependability. De Laval water works pumps installed more than thirty years ago still give excellent service.

M-50

DE LAVAL

STEAM TURBINE COMPANY · TRENTON 2, NEW JERSEY

# A COMPLETE HYDRANT SERVICE



Originators of the CALIFORNIA type of Hydrant, with INDIVIDUAL, integrally constructed globe type valves on all outlets. We have manufactured and sold this type of Fire Hydrant with its various improvements continuously for over seventy-five years. This is the Fire Fighter's Ideal Hydrant for use in non-freezing climates. Sold through your jobber.

**FOR THE COMPLETE**
*Story of Hydrants for all Climates . . .*

*Send for your*
**FREE**
COPY OF "HYDRANTS BY GREENBERG"

**STABILITY**
*Since 1854*

M. GREENBERG'S SONS
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SIGNS 18" X 24" TAKEN AT 150 FEET
Comparison proves
THE ADDED SAFETY YOU GET
with Scotchlite signs
OVER PAINTED SIGNS
SAME SIGNS 18" X 24" TAKEN AT 600 FEET

● Over-all reflectorization makes it possible to give motorists the necessary warning needed to stop before coming upon a hazard. The extra distance a SCOTCHLITE sign can be read over pai ted signs is a factor of safety. Those that are charged with the safe flow of traffic can depend on this marking as the most logical to use for high speed travel. Installing them today will insure signs that are correct for tomorrow's demands. Write for complete information.

AVAILABLE IN ROLL FORM

MADE AND PATENTED IN U.S.A. BY

3-M

MINNESOTA MINING AND MANUFACTURING CO.
GENERAL OFFICES: SAINT PAUL 6, MINN.

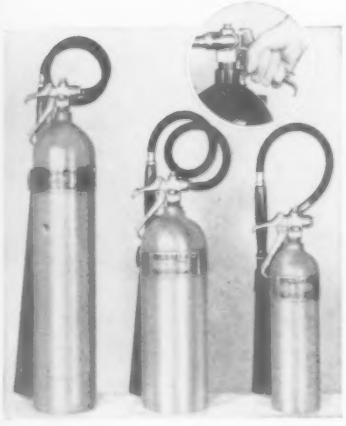
## *E. Franks Assumes A-C Wheel Tractor Sales Duties*

Ernest Franks has been placed in charge of sales of industrial wheel tractors and power units for the Tractor Division of Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

Mr. Franks has been with the company since 1927. His service and field engineering experience until 1935 amply qualify him to handle sales of industrial wheel tractors. For the past ten years he headed the power unit department.

## *New Fire Extinguisher Acts Swiftly*

American-La France-Foamite Corp., Elmira, N. Y., recently introduced the Alfite Speeder, a portable fire extinguisher engineered expressly for extinguishing small oil or electricial fires quickly. This equipment, which employs carbon dioxide as its extinguishing agent, is available in three sizes: Models 15, 10, and 4, each indicating the pound capacity of the gas.



*The Speedex operating valve lever is directly above the carrying handle.*

Equipped with a pressure-operated valve, it is faster and more easily controlled at the fire area than more common-place wheel operated valves. The operating valve lever is placed directly above the carrying handle and the operator can easily open and close the valve lever by pressing or releasing his hand grip while maneuvering his position at the same time.

For continuous operation the D-yoke ring is slipped over the operating lever while it is depressed. All models are approved by Underwriter's and Factory mutual laboratories.

## *Hendy Appoints New Executive*

C. G. Cox has been appointed to the executive staff of the Joshua Hendy Iron Works, Sunnyvale, Calif., according to a recent announcement by A. A. Browne, Manager of Engineering and Sales.

*C. G. Cox*

Mr. Cox will serve as administrative assistant to Browne aiding in the formulation and execution of company sales and engineering policies. Mr. Cox was formerly Vice-President and General Manager of the Enterprise Engine and Foundry Co., San Francisco.

## *Aerial Surveys and Equipment*

The services of the Abrams Instrument Corporation and Abrams Aerial Survey Corporation, 606 E. Shiawassee St., Lansing, Mich., are again available to municipalities.

In addition to its complete line of aerial mapping and photo interpretation equipment, which is available for immediate delivery, including stereoscopes, contour finders, and vertical sketchmasters, the instrument corporation is introducing a universal electrical timer which will have a wide application in the control of methods and processes.

The survey corporation is sponsoring short training courses all over the country to train and instruct engineers in the proper use of aerial photographs. They offer a complete service, including consultation, covering the entire aerial mapping field from the photograph mission to the compilation of finished maps.

*While maneuvering his position the operator of the fire extinguisher regulates pressure with his right hand.*


*A timely message to City Managers*

**HAND** heavy-duty storage batteries, when installed in the following Departmental vehicles, show long life characteristics:

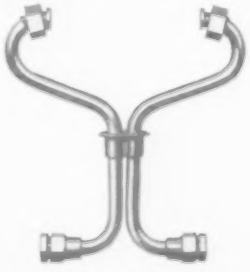
| | |
|---|---|
| POLICE RADIO CARS | 3-6 yrs. |
| SANITATION TRUCKS | 3-6 yrs. |
| ROAD SCRAPERS & SNOW PLOWS | 3-6 yrs. |
| EMERGENCY TRUCKS & AMBULANCES | 4-6 yrs. |
| FIRE ENGINES | 4-9 yrs. |

**HAND** storage batteries are unconditionally guaranteed for two years. Departmental test runs are invited.

**The HAND LABORATORY**
*for*
*Electro-Chemical Research and Development*
**Nyack, N. Y.**

*FORD 90 SERIES*
**COPPERSETTER**

**An ideal meter mounting for installing a water meter in a service line from 24" to 40" in depth.**



The 90 Series COPPERSETTER is all copper and brass. It saves risers, ells, meter couplings and pipe joints. — is easily installed. Holds space for meter correct; provides electrical bond for service. Ask for catalog and further information.

**FORD METER BOX CO.,**
**WABASH, IND.**

## FOR UNIFORMS THAT BUILD CONFIDENCE — *DEMAND*

# REEVES ARMY TWILL

***"FROM COTTON TO CUTTER"***

Leading milk and food delivery systems specify *invasion-tested* Reeves Army Twill for durable, smart-looking uniforms. This top-quality fabric helps build consumer confidence and employee morale. Over 90 million yards have already been sold to the Government to equip America's fighting men, where it is proving itself under the toughest climatic and combat conditions of global war. Sanforized Shrunk* and color-fast to sun, water and perspiration, it will meet *your* post-war uniform needs.

*Residual shrinkage less than 1%

**THE REEVES FABRIC GROUP INCLUDES:** *Reeves Army Twill • Glengarrie Poplin • Reeveking Gabardine • Byrd Cloth • Marine Herringbone • Mountain Cloth • Warrior Twill*

SPINNING • WEAVING • DYEING • FINISHING — Reeves FABRICS

Mills Mill, Greenville, S. C. and Woodruff, S. C.
Fairforest Finishing Co., Spartanburg, S. C.

**REEVES BROTHERS, INC.**
**54 WORTH STREET • NEW YORK 13, N. Y.**

*Representatives in Atlanta • Boston • Chicago • Dallas • Los Angeles • Philadelphia • St. Louis • Montreal • Toronto*

## *Food Machinery Purchases Dayton-Dowd Company*

Food Machinery Corp., San Jose, Calif., has purchased the Dayton-Dowd Co. of Quincy, Ill., which will become a branch of the Peerless Pump Division of the Food Machinery Corporation whose headquarters are in Los Angeles, Calif., according to an announcement by Paul L. Davies, President. This brings to 15 the number of affiliated plants under the control of the Food Machinery Corp.

*Clarence M. Frazier*

Plans of Food Machinery call for continuation of the present plant in Quincy as Peerless Pump Division, Inc. The Peerless Pump Division covers the United States with a sales organization and is now a leading manufacturer in both the horizontal centrifugal pump field and in the vertical turbine pump field. Other branches and offices of Peerless include Fresno and Bakersfield, Calif.; Canton, Ohio; and Plainview, Texas.

*Francis E. Fairman*

All present lines now made by Dayton-Dowd will be continued, augmented and expanded. Distribution will continue under the present sales representation.

Two major changes in the executive setup have been announced. Clarence M. Frazier, Vice-President, who has headed the Peerless Pump Division of the corporation, returns to San Jose, Calif., to assume work in connection with the over-all management. His assistant, H. J. McKenzie, will go to Quincy to control that branch.

*Henry J. McKenzie*

Francis E. Fairman, former General Electric executive, has been named Manager of the Peerless Pump Division and a Vice-President of the Food Machinery Corporation. Mr. Fairman, who has more than 20 years of engineering and sales experience behind him, is a graduate of the U. S. Naval Academy at Annapolis. He joined General Electric Company as a switchgear engineer at its Baltimore works in 1923, and steadily advanced till he was named Assistant Manager of the Switchgear Division in 1941. He has served as Chairman of the Power Switchboard Group of the National Electrical Manufacturers Association, and as Chairman of Manufacturers' representatives on the EEI-AEIC-NEMA Joint Committee on power circuit breakers.

Mr. Dowd will continue as Executive in Charge of Engineering of the Quincy branch. Mrs. Celia B. Dayton, Chairman of the Board, and Mr. Dayton, President of Dayton-Dowd, are retiring from the company.

## *Nordberg Wins Laurels for War Work*

Employees and management of the Nordberg Mfg. Co., Milwaukee 7, Wis., in view of their continued outstanding performance in the war effort, have been honored with their fifth award for the Navy "E" pennant entitling them to display five stars.

In addition, the U. S. Maritime Service has presented them with a fourth award for their Maritime "M" pennant. Since this pennant originally had one star this makes five stars.

Nordberg Mfg. Co. is a peacetime manufacturer of diesel and steam engines, compressors, crushers, screens, and hoists.


MOTOR RECONDITIONING by experts!

YOUR Automotive Jobber!

Gasoline and Diesel motors, pumps, compressors and a multitude of other mechanical units can be promptly serviced or reconditioned by your Automotive Jobber. In addition to a complete stock of over a 100,000 service parts, tools and equipment, he maintains a completely equipped machine shop staffed by skilled personnel accustomed to precision work. He can be an invaluable source of thoroughly experienced, prompt, intelligent service.

*You can depend upon your Automotive JOBBER!*

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ACCESSORIES • SUPPLIES

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Devoted to maintaining and improving the Quality Standards of Service Parts, Equipment and Accessories manufacture, distribution and installation in America's thirty million automotive vehicles, and millions of internal combustion engines, and mechanical equipment.

NATIONAL STANDARD PARTS ASSOCIATION
35th Floor, 8 South Michigan Avenue, Chicago 3, Illinois

# Saves

• TIME
• LABOR
• MONEY

*Permanent* joints on *permanent* pipe! All you do is "socket the spigot and calk" . . . for the lead and redwood wedges are placed in the pipe bells at the McWane foundry. Saves time! labor! money! All sizes 2" thru 12".

McWANE CAST IRON PIPE CO.
BIRMINGHAM 2, ALA.

**McWane PRECALKED Pipe**



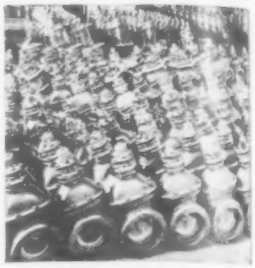
## SMITH VALVES AND HYDRANTS *Available NOW!*
*for Maintenance NEEDED NOW!*

Recognizing the *necessity* for adequate maintenance of the nation's water supply systems, the W. P. B. has, since the beginning of the war, authorized the production of certain needed water works materials, including valves, hydrants and maintenance equipment. Thanks to this far-sighted policy, the A. P. Smith Manufacturing Company is now in a position to offer prompt shipment of:

**FIRE HYDRANTS**
**GATE VALVES**
**TAPPING SLEEVES**
**and VALVES**

And other Smith water works equipment.

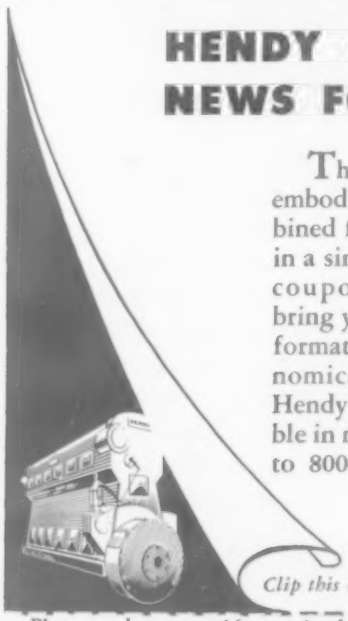
There's no reason to let your system run down or to deny adequate service and protection to the communities you serve. Do your needed maintenance work now and take advantage of the availability of Smith products.



THE A. P. SMITH MFG. CO.
EAST ORANGE NEW JERSEY



## HENDY HAS NEWS FOR YOU



The Hendy Diesel embodies features combined for the first time in a single design. The coupon below will bring you complete information on the economical and efficient Hendy Diesel. Available in models from 190 to 800 hp.

*Clip this coupon, mail it today!*

Please send me your 16-page, 2-color illustrated booklet showing the modern features now available in Hendy Diesels.

*Name* _____
*Company* _____ *Position* _____
*City* _____ *Zone* ____ *State* _____

JOSHUA **HENDY** IRON WORKS
ESTABLISHED 1856
SUNNYVALE, CALIFORNIA



## WANTED: TRAINED ADMINISTRATORS

☆ Cities all over the country are losing some of their top administrators to the federal and state governments and to defense industries. Unless there are trained replacements for these key men, city governments will be seriously crippled. If you are a department head, you owe it to your city to train an "understudy" for your job. If you are a junior administrator, now is the time to prepare for advancement.

***Enroll now in one of these nine practical correspondence courses:***

- Technique of Municipal Administration
- Municipal Finance Administration
- Municipal Police Administration
- Municipal Recreation Administration
- Local Welfare Administration
- Municipal Personnel Administration
- Municipal Public Works Administration
- Municipal Fire Administration
- Local Planning Administration

☆ Special texts have been prepared for administrators on the job. Lesson papers are reviewed by leading authorities in each field. The $35 fee for each course covers the text, individualized lesson instruction, and a certificate upon satisfactory completion of the work. The text alone sells for $7.50 a copy—$60 for a complete set. For use in group training projects, in lots of five or more, the price is $6 a copy.

*There are now nearly 800 public officials enrolled in these courses in nearly 300 cities in 44 states.*

WRITE FOR A SPECIAL CIRCULAR TODAY

**THE INTERNATIONAL CITY MANAGERS' ASSOCIATION**
1313 EAST 60TH STREET CHICAGO 37

*Originally designed for finishing, grading, and ditching operations in highway work, the "Gradall", equipped with a bucket instead of a blade, does snow removal work for Cleveland.*

LINCOLN ELECTRIC CO. PHOTO

## *Engineered Snow Removal*

Greater Cleveland's heaviest snows in 30 years produced novel methods of snow removal, but none was more unique or more effective than the modified "Gradall" produced by the F.W.F. Corp., Cleveland, Ohio.

Originally designed to save labor in finishing, grading, and ditching operations along highways and railroads, this hydraulically operated equipment was converted by replacing the blade with a bucket. On certain streets in University Heights where the snow had drifted to a height of more than four feet, and could not be moved by any equipment available to the suburb, this machine lifted over 1,000 cubic yards a day, and piled it a distance of 20 feet or more from the roadway.

Not having the vertical boom used on power shovels, the new machine can operate beneath trolley wires and other obstructions with ease and efficiency. Likewise, it permits the cleaning of snow from sidewalks in business areas without damage to pavements and parking meters.

Its long reach has been utilized to do a rapid job of filling trucks, when snow must be removed from streets and railroad yards. When fitted with a plow blade, the machine can be driven along highways to force back the crest of snow moved by plows in the conventional manner, thus making it possible for plows to clear an adequate highway width when new storms blanket the area.

ARTHUR W. TODD
Councilman
Cleveland 18, Ohio

## *Laboratories for Testing Materials*

The Haller Companies, consisting of The Haller Testing Laboratories, Inc., The New England Inspection Bureau, Inc., and The Haller Engineering Associates, Inc., maintain in the North Atlantic States laboratories for the testing and analyzing of materials used for construction and maintenance work.

Some of the available facilities of interest to municipalities are concrete inspection and control; bituminous paving materials inspection, and supervision of paving operations; soils surveys, studies, and tests; inspection of structural and reinforcing steel; inspection of welding operations; and pipe and timber inspection.

Facilities for taking concrete cores from pavements by either diamond or shot drills are available to municipalities which do not regularly maintain this equipment.

Inspectors are available at the source of manufacture for sampling and sealing cars of cement, asphalt, road oils, etc.

Information is available to municipal engineers and to purchasing agents for preparing contracts for fuels based on the btu determination.

A pamphlet describing the facilities and the general scope of their services will be sent on request.


CIRCUL-AIR
FIRE HOSE DRYER
- Is easier to use
- Saves drying time
- Reduces hose stretch
- Prevents mildew and rot
- Improves building design
- Air-conditions as it dries

FAN EXHAUSTS MOISTURE AND STIMULATES AIR
SLIDING TRAYS MAKE HOSE LOADING EASY
WARM AIR REMOVES MOISTURE FROM HOSE
ELECTRIC HEATERS WARM AIR CURRENTS

THE CIRCUL-AIR CORPORATION
6339 East Palmer Avenue
DETROIT 11, MICHIGAN



Preferred FOR Permanence

MORE AND MORE OF THIS PIPE

BEING USED FOR

- House-to-Sewer Connections
- Downspouts
- Industrial Drainage
- Septic Tank Filter Beds (Perforated)
- Foundation Drains (Perforated)

ORANGEBURG is the non-metallic, non-corrodible, root-proof pipe that has met with such wide favor because of its long, trouble-free life, moderate cost and ease of installation. TAPERWELD joints require no cement, stay permanently tight.

ORANGEBURG PIPE has many interesting characteristics. Let us send you bulletins showing mechanical strength, hydraulic and chemical properties. Write today. THE FIBRE CONDUIT CO., DEPT. AC-6-45, ORANGEBURG, N. Y.

ORANGEBURG
The Root-Proof Pipe

# Your Better City of Tomorrow

# Needs Bold Planning Today

Cities are merely groups of neighborhoods. And those neighborhoods are the nerve centers of production, culture and progress of the Nation.

The homes, office buildings, factories, schools, churches, hospitals, hotels, streets, recreational centers, water, power and light systems are but the servants of those communities for a more satisfying and enjoyable existence.

These facilities for the kind of living which the American people want are badly run down after nearly four years of war. If not in actual disrepair they are certainly inadequate for a prosperous postwar era.

Cities need expanded traffic and terminal facilities for rail, air, water and highway transport... One acre of park and recreational area per one hundred persons . . . Modern parking facilities for a large increase in private cars... Many private and public buildings erected or rebuilt at once... Immediate attention to the pent-up demand for residential housing and countless other improvements.

If your city is to lead in business and social progress, then bold, imaginative planning is needed *today*. In transforming the dreams into reality, maximum value in the improvements is secured by sound planning by competent architects and engineers, and efficient and economical construction by qualified general contractors.

A. G. C. General Contractors have the skill, integrity and responsibility to execute the projects and deliver a completed structure or facility at a specified time and predetermined cost. The A. G. C. Emblem identifies the firms which have the ability and equipment to rebuild your community speedily and satisfactorily.

## THE ASSOCIATED GENERAL CONTRACTORS *of* AMERICA, INC.

*Ninety Branches and Chapters Throughout America*

**National Headquarters — Munsey Building, Washington 4, D. C.**

SKILL, INTEGRITY AND RESPONSIBILITY IN CONSTRUCTION OF BUILDINGS, HIGHWAYS, RAILROADS, AIRPORTS AND PUBLIC WORKS

## *PEMCO Appoints Manager of Lighting*

J. L. Kilpatrick has been appointed Manager of Lighting and Design at the Philadelphia Electrical and Manufacturing Co., Philadelphia, Pa., according to R. A. Manwaring, President.

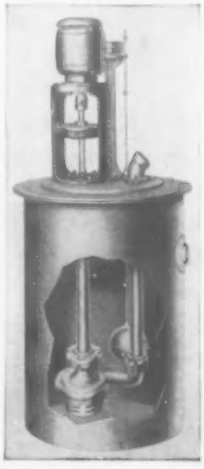
*J. L. Kilpatrick*

Mr. Kilpatrick started his career with the Brooklyn Edison Co. as Supervisor of the Architect and Sign Division of the Lighting Department. After that he joined Cox, Nostrand and Gunnison as Illuminating Engineer and worked on the special lighting of the Daily News Building and the Chrysler Building in New York, the office of the President in the White House, and a number of United States Embassies around the world.

More recently he was associated with the Westinghouse Electric Company as Lighting Specialist and served as engineer for them on a number of sports field lighting installations. He served as consultant in the development of the lighting of the Pennsylvania Turnpike, the New York World's Fair, many airports for civilian and Army use, and several shipyards.

## *Heavy-Duty Bilge or Sump Pumps*

A new and improved heavy-duty sump pump design has been introduced by Yeomans Brothers Co., 1417 N. Dayton St., Chicago 22, Ill., pioneer manufacturer of submerged type pumps and sewage ejectors.



*Yeomans' new sump pump.*

Any of the municipal utilities—sewage treatment and water filtration plants, parks and pools, power and light plants, incinerators and reservoirs—will find them valuable. They are designed also for pumping drainage from public buildings, tunnels, and underpasses.

These pumps operate automatically, starting and stopping as the level of liquid rises or falls in the basin. The new Yeomans design includes a self-lubricating lower pump bearing, a new enclosed-type impeller, indexed fittings, a stuffing box at the cover, grease lubrication, and a motor support which raises main bearing well above level of floor dirt.

Bulletin 3003 carries additional details and will be sent on request.

## *Protection of Clarifier Mechanism Against Corrosion*

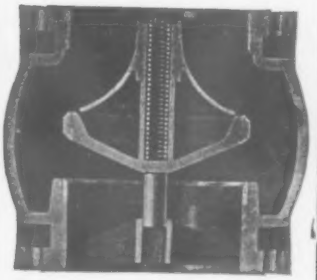
Municipal plants facing the problem of clarifying river water for domestic purposes will be interested in the simple corrosion control system installed at Ashland, Ky.

The Ashland Water Department treats Ohio river water which is first processed in a clarifier. Due to the highly corrosive action of this water, the clarifier mechanism was corroding and deteriorating at an alarming rate.

To eliminate such costly corrosive action, J. P. Brownstead, Superintendent of the Ashland Water Department, some months ago installed a Rustop System. Rustop is a cathodic or electrical system for controlling corrosion of submerged metal surfaces. Periodic inspections have proved that this method has been highly successful in eliminating the corrosion.

The Rustop System for water tanks and clarifier mechanism is a product of Electro Rust-Proofing Corporation of Dayton 10, Ohio, to whom all inquiries along this line will be welcome.


SMOLENSKY VALVES



■ The Smolensky Radialflow Noiseless Check Valve eliminates water hammer, which assures operating efficiency and noiseless operation.

Designed to be constructed with a cast iron body, plug, spider, and made with a renewal bronze valve seat or seat of other metal when required.

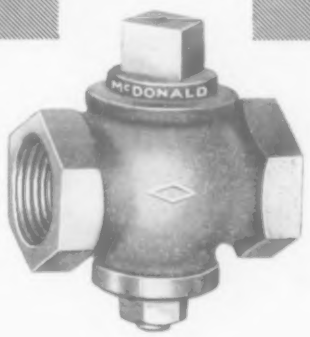
Specify Smolensky Valves for your water works plant and assure yourself years of trouble-free service.

*Economy—Durability*

THE SMOLENSKY VALVE CO.
940 BROADWAY, BEDFORD, OHIO



Your MARGIN of SAFETY




McDONALD STEAM STOPS

McDonald Steam Stops are expertly engineered and precision manufactured to give outstanding performance, years of service. As a matter of fact, they are built and tested for 125 pounds steam working pressure—an extra 25 pounds of "margin of safety." This same attention to quality and ruggedness goes into all McDonald Water Works goods—the reason for the trade preference for over eighty-nine years.

EST. 1899 McDonald

ILLUSTRATED:

*Plate E-9702—McDonald Square Head Steam Stop for 125 pounds steam working pressure. All bronze. Sizes ¼, ⅜, ½, ¾, 1, 1¼, 1½, 2, 2½ and 3 inches.*

A. Y. McDONALD MFG. CO.
DUBUQUE, IOWA
BRASS GOODS • PUMPS • OIL EQUIPMENT

***When you need machine accounting information—***

Reference files maintained in every Burroughs office contain the latest detailed information on machine accounting methods and procedures. This information, as well as the broad, diversified experience of the Burroughs technical staff, is available at all times to help you meet today's accounting problems.

***When you need mechanical service for your Burroughs—***

You can depend on the experienced Burroughs service organization to provide the highest type of mechanical service . . . promptly, efficiently, and at moderate cost. Periodic inspection, lubrication and adjustment of your Burroughs machines, performed with typical Burroughs thoroughness and guaranteed by Burroughs, can do much to insure top performance and maximum production.

***When you need carbon papers, ribbons, roll papers—***

Your local Burroughs office is your best source for supplies for all types and makes of business machines. These supplies are manufactured to specifications that Burroughs' years of experience have proved give best results. You save money, too, through quantity discount plans which permit you to order as little or as much as you need at any one time—thus assuring freshness and eliminating storage problems.

# Call Burroughs

**The Burroughs technical staff and the Burroughs mechanical service organization are working constantly with users—helping them get fullest use from the business machines they now have . . . helping them adapt these machines to new conditions . . . helping them keep their Burroughs equipment at top operating performance. For help in meeting *your* problems, telephone your local Burroughs office, or write Burroughs Adding Machine Company, Detroit 32.**

# Burroughs 1st

IN MACHINES • IN COUNSEL • IN SERVICE

FIGURING, ACCOUNTING AND STATISTICAL MACHINES • NATIONWIDE MAINTENANCE SERVICE • BUSINESS MACHINE SUPPLIES

*A Rex speed prime centrifugal pump was mounted on a two-wheel trailer at Keewatin, Minn., to meet a need for fire fighting equipment.*

## *Centrifugal Pump as a Fire Fighting Unit*

The problem of fire control in small towns, especially those located away from larger communities, is a difficult one because of the expense involved in purchasing and maintaining regular fire fighting equipment.

Here is the way one village solved its problem: Keewatin, which lies in the range country of Minnesota, mounted a Rex speed prime centrifugal pump manufactured by the Chain Belt Co., Milwaukee, Wis., on a light two-wheel trailer, together with other fire fighting equipment. This trailer can be pulled by a small truck or passenger car and can be spotted easily by hand if necessary. Pump fixtures were altered to accommodate regulation fire hose and thus the township has, through its own ingenuity, a dependable fire fighting machine.

Beside being used to combat fire, the pump has been used to empty flooded basements, to drain ditches, and to pump out manholes and flooded areas with excellent results.

## *All Police in South Dakota on Same Radio Frequency*

A state-wide two-way FM radiotelephone system is to be installed in South Dakota now that permits have been granted by Federal authorities. It will include several innovations in two-way radio to assure blanket coverage for the entire state.

All cars of the county sheriffs, deputy sheriffs, and city policemen are to be equipped with two-way radiotelephone units operating on the same frequencies as the state, giving South Dakota what is said to be the largest and most comprehensive three-way radiotelephone system in the world.

The initial installation will consist of six 250-watt Motorola central control stations, with steel antenna towers 200 and 400 feet high, strategically located throughout the state, and equipment of 110 vehicles of the State Highway Department and state police with mobile two-way transmitter and receiver units.

In the Black Hills, where the mountains would ordinarily interfere with two-way radio communication between the mobile units and the central stations, two mountain automatic radio repeater stations will be installed, one at Deadwood and one at Custer. These will be located at high points of vantage to give maximum radio range between the mobile and the fixed units.

However, they cannot be reached by the usual land line telephone wires, so a two-way radio control circuit will be established at Rapid City to act as the control point between Rapid City and the mountain stations. The radio dispatcher at Rapid City will broadcast his message which will be picked up by the receivers on the mountain top stations.

Radio message sent from the cruising automobiles will in turn be picked up by the receivers on the mountain top stations, thence broadcast on the 118 megacycle band, and picked up by the dispatcher in Rapid City. In all, four automatic mountain repeater stations of this type will be installed to insure complete two-way radio coverage in the mountainous areas.

Another particularly advantageous feature provided by the Motorola installation is the provision made for three-way radio communication in case of emergencies. All central stations are to transmit on a frequency of 39,110 kc and the cars on 39,180 kc. The cars, however, will be provided with two easily interchangeable tuning crystals, one on each wave length, so that if any necessity should arise, the crystals may be changed and three-way radio, or car to car operation, instantly obtained.

From any point in the state the operators of the mobile units will be in instant verbal touch with a central control station. Two-way radio communications will thus cover the entire state and assure added protection, greater safety, and prompt handling of any emergency situation that may arise.

The equipment to be installed is similar to the Motorola FM two-way radiotelephone systems now operating in over 1,000 communities and in 34 state police systems throughout the United States, the Canal Zone, and Hawaii. All units are designed and manufactured by the Galvin Mfg. Corporation, Chicago 51, Ill.

## *Sales Appointment for Neptune Meters, Ltd.*

W. J. (Bill) Waddell has been appointed to the sales staff of Neptune Meters, Ltd., Toronto, Ont., Canadian subsidiary of the Neptune Meter Co., 50 W. 50th St., New York, N. Y. Mr. Waddell was educated at Ridley College, St. Catherines, Ontario, and was previously with the Surveys Branch of the Ontario Department of Highways.

He was a Captain in the Royal Canadian Artillery for five years, four of which were spent in Italy and France. He was awarded the Military Cross for his exploits at Falaise and for a time was a German prisoner, but released when the Germans were surrounded by the Canadian troops.


**APCO-V-APCO PRIMERS**

AUTOMATIC
POWER
OR
TANK PRIMERS

**AIR RELEASE VALVES**

FOR
FILTER PIPE LINES
DISTRIBUTION LINES
AND OTHER USES
17 TYPES

**VALVE AND PRIMER CORPORATION**

Room 366—111 W. Washington St.
CHICAGO, ILL.

**CAN YOU SELL PARKING METERS?**

A successful manufacturer of parking meters will start a top grade sales manager at high salary plus liberal commission. The requirements are sales ability of a high order and a practical acquaintance with municipal purchasing conditions. Tell us about your experience in municipal selling and why you believe you can earn the good money we are prepared to pay the right person.

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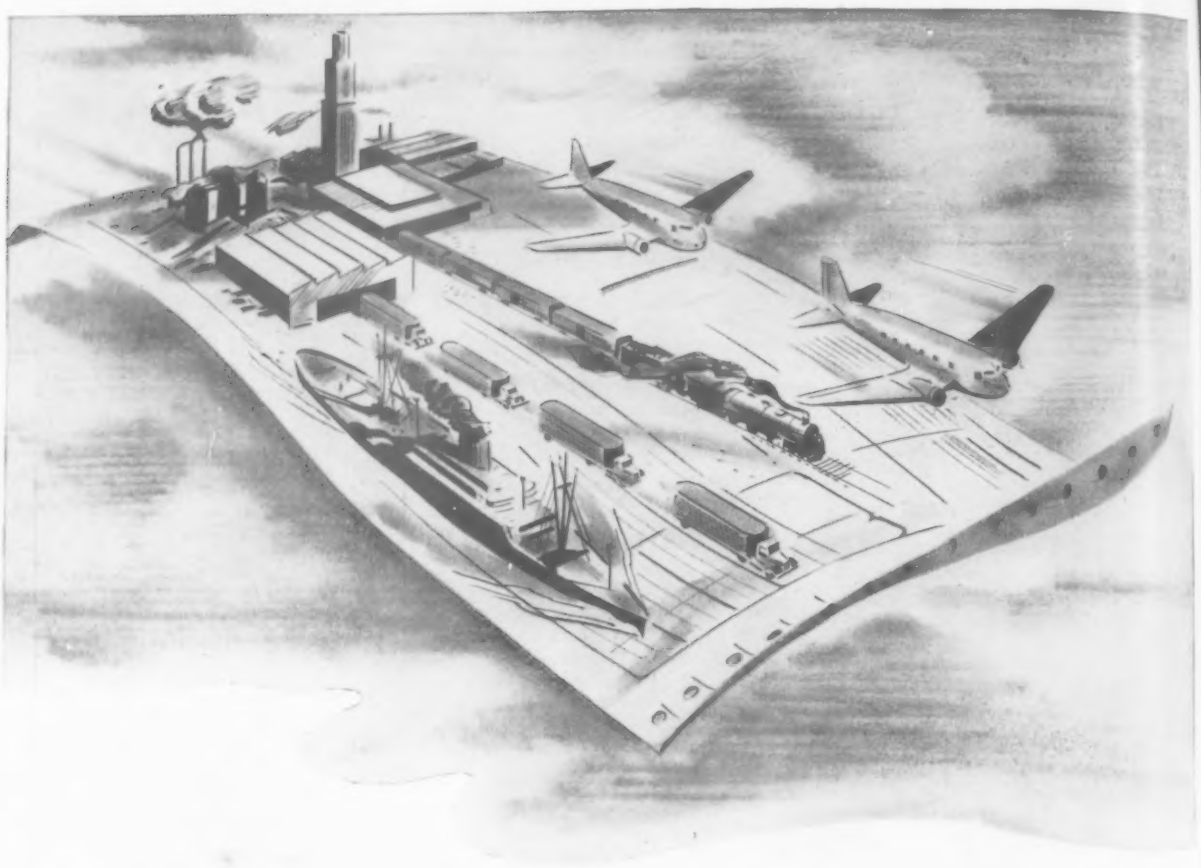

# Everything goes on PAPER

TODAY'S magic carpet of business is a sheet of paper. Everything that is produced—from raw material to finished product—rides along on countless forms and records.

Purchasing orders, receiving records, stock lists, job tickets, cost sheets, shipping forms, labels, bills of material, invoices are only a few of the many items of paper routine.

The time required to handle this avalanche of paper work represents a big part of the cost of doing business. Every dollar cut from this cost means a dollar added to profit.

A unique method of Multilith duplicating will help you save those dollars by saving time. From ordinary pieces of blank paper, the Multilith runs the business form and variable information *at the same time* . . . produces completed records that are black on white and *easy to read* . . . eliminates the need for carbons. And these records are *permanent* because they are duplicated with lasting, non-fading ink.

Let a Multigraph representative show you many new ways to utilize Multigraph and Multilith duplicating to simplify office systems, lighten work, and make great savings in time and money on repetitive paper work. Phone our local office or write Research and Methods Department of Addressograph-Multigraph Corporation, Cleveland 17, Ohio. Sales agencies with service and supply departments in principal cities of the world.

PAPER PACKS A WAR PUNCH!

Multigraph

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SIMPLIFIED BUSINESS METHODS

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## *Mrs. Milo E. Smith Christens New Ship*

Mrs. Milo E. Smith acted as sponsor for and christened the U. S. S. *Krishna* at the recent launching ceremonies at the Navy Yard operated by the Chicago Bridge & Iron Company at Seneca, Ill.

*Mrs. Milo E. Smith*

When the shipyard was built in 1942, Mrs. Smith's husband, who is Advertising Manager of the Chicago Bridge & Iron Company, Chicago, Ill., served for a year as company representative to cooperate with various federal agencies in the establishment of facilities to serve the shipyard, such as housing, school, water system, and roads.

## *Production Award for Rosco Manufacturing*

The men and women employees of the Rosco Manufacturing Co., Minneapolis, Minn., have been given the Army-Navy production award for great achievement in the production of equipment for the war effort.

Presentation ceremonies took place at the plant on March 23. Col. M. H. Wilson, U.S.A., Deputy Division Engineer, St. Louis, Mo., made the presentation which was accepted by Thorman W. Rosholt, President of the company.

## *Gardner-Denver Elects New Director*

Alfred Kauffmann was elected a Director of the Gardner-Denver Co., Quincy, Ill., at the annual stockholders' meeting held recently.

*Alfred Kauffmann*

Mr. Kauffmann, retired President of Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill., succeeds P. H. Gardner who resigned his directorship because of ill health.

Mr. Kauffmann joined the Link-Belt Company in 1901 immediately after his graduation from Pratt Institute, starting as a draftsman and rising to superintendent in the Construction Department. In 1909 he was sent to West Virginia as sales engineer in the coal fields, and in 1913 he was made manager of the company's Link-Belt eastern division in Philadelphia. Two years later he was placed in charge of Indianapolis operations as Vice-President and was elected President of the company in 1924. He retired in 1943 but remains a member of the Board of Directors of the Link-Belt Company.

## *Chicago Consulting Firms to Plan Atlanta Highways*

Plans for a system of highways for Atlanta are to be developed under the direction of the Georgia State Highway Department. These plans will include interregional routes to serve the Atlanta metropolitan area, and the coordination of proposed new highways with existing state roads and streets.

The firms of DeLeuw, Cather and Co., Chicago, Ill., and H. W. Lochner and Co., Chicago, Ill., have been retained as consultants by the Highway Department with the approval of Thomas H. MacDonald, Commissioner, Public Roads Administration. Charles E. DeLeuw, senior member of DeLeuw, Cather and Co., was formerly Chief Engineer of the Department of Subways and Superhighways of the city of Chicago. Mr. Lochner was formerly Assistant Superintendent of the Cook County Highway Department. Both participated in Chicago's plans for the construction of a network of superhighways. W. Earle Andrews, Consulting Engineer, will assist in the work.


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# A TRIBUTE

TO

## HARLEY-DAVIDSON PERFORMANCE

NEARLY 500 police departments have had their orders for Harley-Davidson Police Motorcycles approved by the *War Production Board and deliveries have been made! That so many American communities of all sizes prefer Harley-Davidson Police Motorcycles is a tribute to their long record of dependable performance—and foretells their increased and widespread use in police fields when present production restrictions are withdrawn.

The current demand for Harley-Davidsons emphasizes the fact that motorcycle equipped police can handle the many phases of traffic control and law enforcement more quickly and thoroughly than by any other method. Police manpower is made more effective by covering larger territory — concentrating quickly at the scenes of trouble — and in maintaining more complete control and respect through constant evidence of uniformed authority.

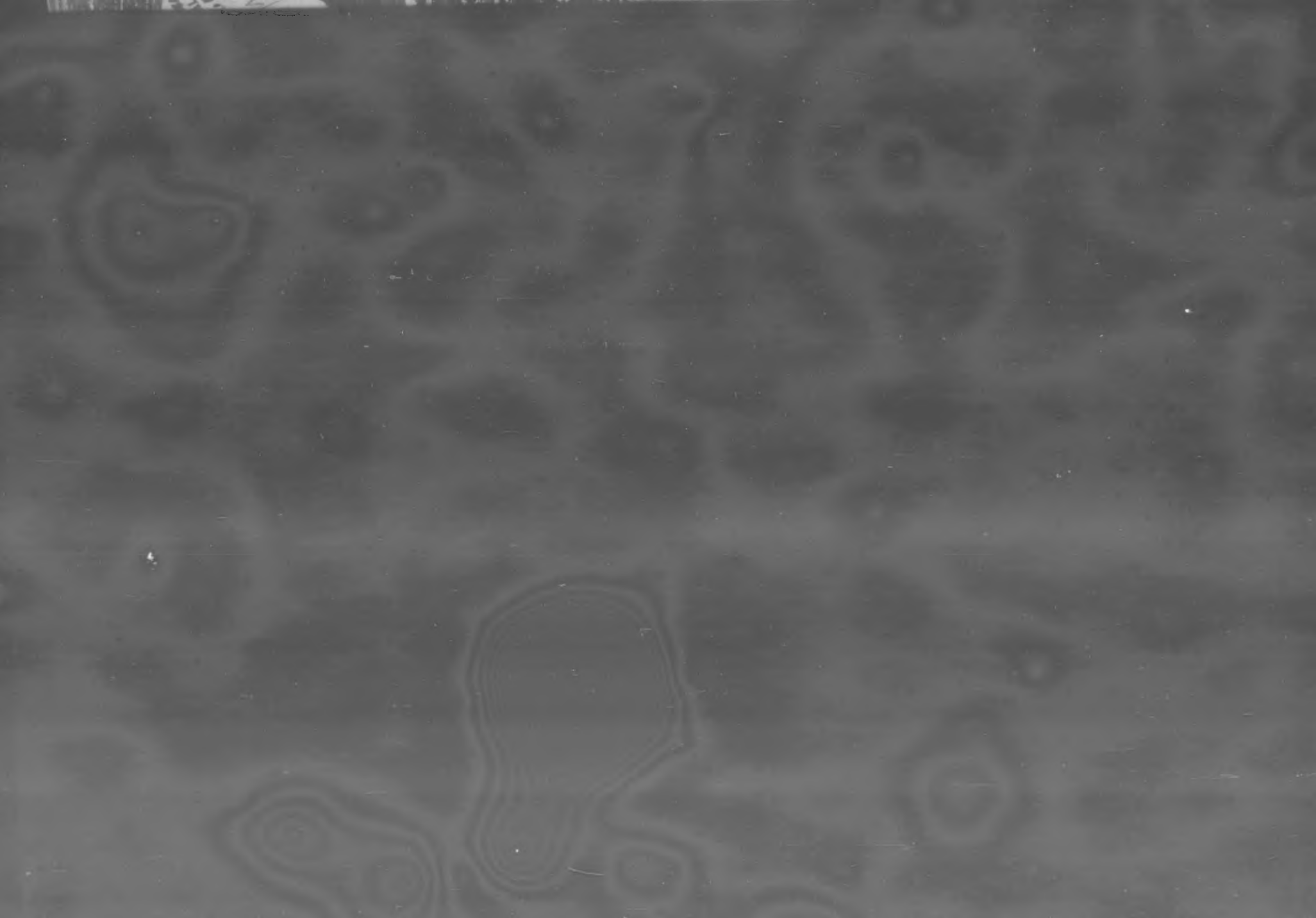
* WPB recognizes that police departments have many new duties and problems thrust upon them by reason of the war, and have shown a willingness to approve orders for vitally needed equipment. See your dealer — or write us for particulars about obtaining these dependable motorcycles to cope with your police and traffic problems.

**HARLEY-DAVIDSON MOTOR CO., Milwaukee 1, Wisconsin**

**HARLEY-DAVIDSON**

☆ *Police Motorcycles*

ON AMERICA'S FRONT LINES OF ACTION



JULY, 1945

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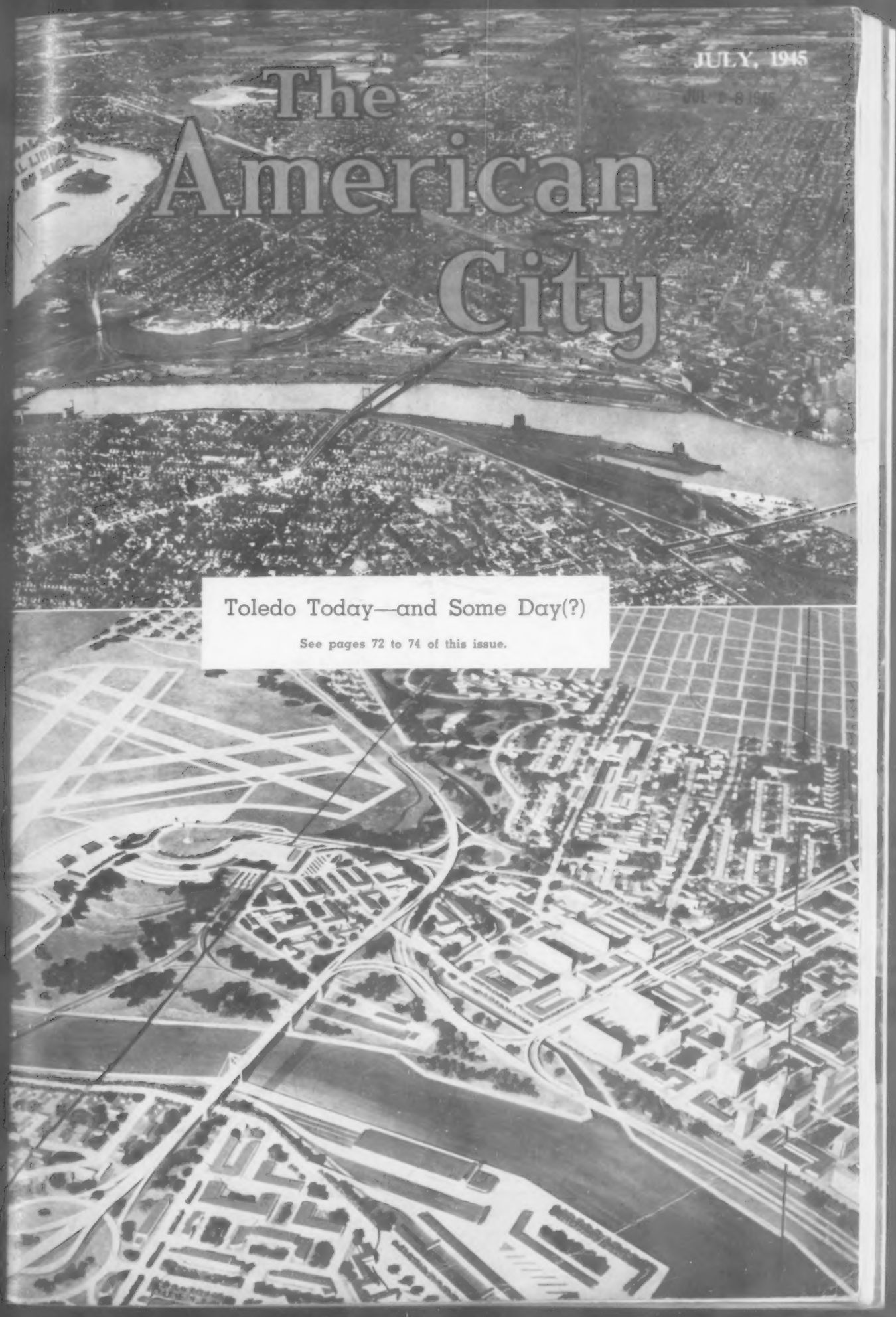
# The American City



Toledo Today—and Some Day(?)

See pages 72 to 74 of this issue.